

BARN, NORTH-EAST OF HALL FARM COTTAGE,
MAIN STREET, HORKSTOW, NORTH LINCOLNSHIRE

ARCHITECTURAL AND
WILDLIFE SURVEY



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EXECUTIVE SUMMARY

In October 2009 Ed Dennison Archaeological Services Ltd (EDAS) were commissioned by Mr Peter Gaze Pace, architect, on behalf of Mr Bruce Rowles of Horkstow Hall, to provide an input into a management plan for a barn forming part of a larger farm complex to the north of Horkstow Hall, near Horkstow, North Lincolnshire (NGR SE98521920). The project, which involved an architectural and ecological survey of the building, was required to inform the restoration of the buildings as part of a Higher Level Stewardship Scheme Agreement with Natural England.

The barn probably dates to the late 16th or early 17th century, and in its original form was a substantial timber-framed aisled structure, comparable in size with large aisled barns in other parts of the region such as Pennine West Yorkshire. Even after the loss of approximately half the original frame, the barn is still a rare example within Lincolnshire of a surviving timber-framed aisled barn. The frame incorporates several large timbers from a substantial late medieval timber-framed building, which was presumably dismantled shortly before the barn was built. The barn was originally of five bays in length, the central bay perhaps being equipped with gabled porches to either end, forming a passage for wagon access and also a threshing floor, with crops being stored to either side.

The construction of the barn may have been associated with the building of the predecessor to the existing Horkstow Hall between 1607 and 1620, although this is not certain. When first built, and for some time afterwards, the barn was probably connected with arable cultivation and there may not have been many associated buildings in the vicinity. In the mid 18th century, the barn was probably used by the painter George Stubbs to carry out his anatomical studies of horses. After the mid 19th century, there was a general trend towards an increase in mixed farming, and at Horkstow a mixed farm coalesced around the open yard to the west of the barn, forming what is described as a 'loose courtyard plan'. Several of the other buildings within the farmstead are of a form that suggests there was some expansion of the complex around the mid 19th century, including the stables which form the western range. The open-fronted shed forming the east range may have been used as an implement shed, and probably dates to the mid to late 19th century.

The development of a mixed farmstead based around an open yard to the west of the barn had a marked effect upon the barn itself. The main access into the yard appears to have been along the south side of the barn, and the creation of this access may have been the reason that the south aisle was demolished. The surviving brickwork of the barn suggests that there were two main phases of alteration to the timber-frame, but within these there were almost certainly several other sub-phases of alteration. The changes to the barn's structure would have had an effect upon the agricultural usage to which it was put. The barn appears to have undergone its last major scheme of repair / alteration during the 1950s, principally the rebuilding of the west gable, and it was most recently used for chitting potatoes.

A daytime bat and barn owl survey of the buildings was also undertaken. This indicated the presence of a small, temporary, summer bat roost (preliminarily identified as brown long-eared bats *Plecotus auritus*) in the stable. The conclusion that bats are absent from the barn must however be treated with caution, as bats often use roosts temporarily during the active season (mid-April to September). The presence of several crevices suitable for bat entry into potential bat roosts within both the barn and stable suggest that one or two bats may temporarily roost in these areas at other times of the year. It is therefore recommended that several precautionary mitigation measures be undertaken to ensure that the status of the local population of bats is maintained prior to, during and after any proposed repair works.

1 INTRODUCTION

Reasons and Circumstances for the Project

- 1.1 In October 2009 Ed Dennison Archaeological Services Ltd (EDAS) were commissioned by Mr Peter Gaze Pace, architect, on behalf of Mr Bruce Rowles of Horkstow Hall, to provide an input into a management plan for a barn forming part of a larger farm complex to the north of Horkstow Hall, near Horkstow, North Lincolnshire.
- 1.2 The project, which involved an architectural and ecological survey of the barn, was required to inform the restoration of the building as part of a Higher Level Stewardship Scheme Agreement with Natural England (ref. AG00271231). The scope of the recording work was defined by a brief prepared by Dr Margaret Nieke, Yorkshire and Humber Historic Environment Advisor to Natural England (see Appendix 4), and this was supplemented by an EDAS methods statement (see Appendix 5). The architectural and ecological recording work was funded by Mr Bruce Rowles (owner) and Natural England.

Site Location and Description

- 1.3 The barn and associated buildings form part of a larger farm complex located on the west side of Main Street, Horkstow, some 4.5km south-west of Barton-upon-Humber, North Lincolnshire (NGR SE98521920) (see figure 1). The farm complex lies immediately to the north of Hall Farm Cottage, and several hundred metres to the north of Horkstow Hall itself (see figure 2). The farm, and indeed the whole village, are located on the very western edge of the North Lincolnshire Wolds, with the ground sloping gently downwards to the west towards the flat lands bordering the Humber estuary; the farm lies at an elevation of c.20m AOD. It is accessed off the B1204 South Ferriby-Worlaby road, and the farm itself is set several metres below the level of the road. The barn is a Grade II Listed Building (see Appendix 3).
- 1.4 The barn, associated buildings and wider Horkstow Hall estate appear to have been the subject of little previous detailed study. At the time of the survey, the barn was in relatively poor structural condition, with water ingress through the roof having caused the internal timber-frame to rot in several places. There were once two ranges attached to the north side of the barn, forming a U-shaped arrangement in plan. The east range, butting the north-east corner of the barn and on the road frontage, was formed by a single storey shed, open-sided to the west. This had collapsed following flood damage and been largely demolished prior to the survey taking place, with retained materials stacked on pallets; a small roofed element survived at the north end. The west range, butting the west end of the north elevation of the barn, was formerly a stables but had most recently been used for low level storage of agricultural chemicals, and was in much better condition than either the barn or shed.

Survey Methodologies

- 1.5 As noted above, the scope of the architectural and ecological survey work was defined by a Natural England brief and an EDAS methods statement (see Appendices 4 and 5).

Aims and Objectives

- 1.6 The primary aim of the architectural survey work was to provide a photographic, drawn and written record of the barn and adjacent structures, while the bat and barn owl surveys were to identify any of the protected species in the buildings. The survey results would then help to inform the preparation of a management plan for the proposed restoration project, and would make appropriate recommendations for any mitigation work as part of the proposed restoration work.

Building Recording

- 1.7 The building recording comprised four main elements, namely documentary research, and drawn, photographic and written recording. Together, the four elements equate to a Level 2 visual and descriptive record as defined by English Heritage (2006a, 13-14). The on-site drawn and photographic recording was undertaken during the week of the 9th November 2009.
- 1.8 As has already been stated, the farm and wider Horkstow Hall estate do not appear to have been subject to any previous detailed architectural study. Therefore, relevant agricultural information was obtained from contemporary and later secondary sources, as set out in the bibliography (Chapter 7) below.
- 1.9 The drawn record comprised a ground floor plan of the farm buildings (defined as the barn, stables and shed) at a scale of 1:50. This plan shows all significant details such as inserted or blocked openings, original fixtures and fittings, and details of items relating to original and subsequent uses. Detailed inspections were undertaken behind and around any stored material to ensure that all relevant features were noted. The information for the drawn record was captured using both traditional hand-held and also remote measurement techniques. Final inked drawings were then produced by hand to publication standard, and are presented as reduced versions of the full sized field drawings using conventions established by English Heritage (2006a, 18-37).
- 1.10 The photographic record was achieved using a digital camera. Once again, English Heritage guidelines were followed (English Heritage 2006a, 10-13). Subject to access, all photographs contain a graduated scale, and artificial lighting was used where necessary, in the form of electronic flash. A total of 94 colour digital shots were taken and printed to a size of 6" by 4". The photographic record (see Appendix 1) includes a register detailing the location and direction of each shot, a figure showing the position and direction of each shot, and thumbnails of the photographs; selected larger prints accompany the main text of the report. A full set of photographic prints has been included with the project archive (see below).

Wildlife Survey

- 1.11 The wildlife survey involved inspecting the three farm buildings for bats and barn owls, as well as undertaking a walkover of the site and its immediate surroundings.
- 1.12 A daytime external and internal inspection for bats was undertaken on 12th February 2010. In February, bats are likely to be using their winter hibernation roosts and evidence includes their physical presence in small cracks in the fabric of the buildings, staining with oil from bats fur, and scratching and droppings. Each part of the buildings was systematically searched; accessible cracks were examined with the use of a Clulite Lamp (1,000,000 candle power) while ladders

were used to access the various crevices between the walls as well as parts of the pitched roofs.

- 1.13 The buildings were also searched for barn owls, barn owl droppings, pellets, feathers and/or nest debris as evidence of day-time roosts and/or nesting sites, at the same time as the bat survey. The walkover survey of the site and its surroundings was also carried out at the same time, on 12th February 2010.

Report and Archive

- 1.14 This report forms a detailed written record of the buildings, prepared from the sources of information set out above, and analyses their form, function, history, and sequence of development, as far as is possible using the previously gathered information. The buildings are also placed within their historical, social and industrial context, where possible using the available documentary and secondary evidence. This report also includes a summary of the wildlife survey, while the full unedited Bat and Barn Owl Report (Holloway 2010) appears as Appendix 2.
- 1.15 The full archive, comprising paper, magnetic and plastic media, relating to the project has been ordered and indexed according to the standards set by the National Archaeological Record (EDAS site code HHB 09). It was deposited with the North Lincolnshire Sites and Monuments Record on the completion of the project.

2 HISTORICAL BACKGROUND

Introduction

- 2.1 The buildings forming the subject of this report, and the farm complex in general, lie within a rich archaeological landscape. Settlement in the Horkstow area is known to date back to at least the Roman period, with the remains of a Roman villa having been discovered immediately to the west of Horkstow Hall in 1797 by labourers constructing a kitchen garden (Smith 1927). Three panels forming an extensive mosaic floor were removed from the excavated villa site and are now on display in Hull Museum (www.hullcc.gov.uk/museumcollections). The village church has Anglo-Saxon origins and overlooks the site of a medieval hall, presumably the medieval manorial centre. In addition, a *camerae* or cell of the Knights Hospitaller preceptory of Willoughton was located at Horkstow in 1338, but by the time of the Dissolution of the Monasteries its revenue had been merged with that of the preceptory (Page 1906).
- 2.2 The presumed medieval manorial centre was occupied into the Jacobean period but was subsequently abandoned and demolished, although the layout of the complex survives as earthworks, including contemporary gardens. A house was built at Horkstow between 1607 and 1620 for Sir Thomas Darrell, and surveyed by John Thorpe, and this is thought to have been located on the site of the presumed medieval manorial centre near the church (Keith Miller, English Heritage, *pers. comm.*); it is believed that little or no trace of this structure now survives above ground. The present Horkstow Hall was built in 1776 for Admiral Thomas Shirley (1733-1814), whose memorial tablet is in St. Maurice's church, with subsequent additions made after the late 18th century. It was described by Pevsner simply as 'a mid-Georgian builder's job with some pattern-book pretensions...' (Pevsner & Harris 1964, 66) but the more recent edition gives a slightly fuller description (Pevsner & Harris 2002, 393).
- 2.3 In 1756, the renowned British painter George Stubbs rented a farmhouse in Horkstow for 18 months, so that he could dissect horses to study their anatomy. The most recent and comprehensive study of Stubbs' life and work by Judy Egerton (2007) concludes that he was at Horkstow between 1756 and 1758. The choice of Horkstow as a location may well have been due to the influence of Lady Nelthorpe, who lived at Baysgarth House in Barton-upon-Humber, and who had sat with her husband for Stubbs' earliest known portrait. Previous studies that attempted to locate the scene of Stubbs' anatomical work concluded that he had used an ancient barn in the grounds of Horkstow Hall, on the basis that this was one of the few places large enough to allow cadavers of horses to be suspended while they were studied. A small scale reproduction of a map of the manor of Horkstow dating to 1761 appears to show a cluster of buildings in the approximate position of those forming the subject of this report. Egerton (2007, 31-34) marks the likely position of the barn to be on the opposite (i.e. east) side of the road, although the evidence on which this location is based is not explicitly stated.
- 2.4 In a conversation held at Scawby Hall in January 1986 between Keith Miller of English Heritage and Colonel Nelthorpe, the latter stated that, according to Nelthorpe family tradition, when Stubbs was undertaking his horse anatomy studies he had stayed at a farmstead to the north of Horkstow Hall, on the lane leading from Barton to Horkstow, near the foot of the hill. He understood that the dwelling Stubbs used was among the farm buildings, now gone, that formerly stood on the east side of the Horkstow-South Ferriby road, but he thought that the barn forming the subject of the present survey on the west side of the Ferriby road was

a candidate for Stubbs' actual anatomical dissections. The barn lies at the foot of the lane from Barton, which effectively continued as a farm track through the farmstead. A location here on the edge of the village was appropriate in view of the nature of Stubbs' investigations and the disquiet or disapproval felt by local people about horse dissection. It was also only a short ride to Baysgarth House at Barton, the home of Stubbs' patron, Lady Nelthorpe. For Stubbs' anatomical studies, the barn would also have had specific practical advantages over other buildings, in that it offered a number of substantial horizontal timber beams at a suitable height for hanging and moving cadavers; these were located near large waggon entrances that would have facilitated moving cadavers and also have provided good lighting for dissection and sketching. These practical advantages would not have been provided by smaller timber-framed farm buildings or brick buildings, which at best have only a few tie-beams and are generally much more limited in terms of hanging and lighting. Given the relative rarity of barns of this size, it is unlikely that another building similarly well-endowed with beams stood in the group of farmbuildings at the foot of the hill. The combined evidence therefore points to the barn forming the subject of this survey as being the prime candidate for Stubbs' anatomical studies of horses in 1756-58 (Keith Miller, English Heritage, *pers. comm.*).

- 2.5 After Stubbs had left, the barn presumably reverted to use as a farm building, forming part of a larger farm complex which developed over the succeeding 200 years according to regional and national trends in agriculture. It is believed to be 30 or 40 years since any stock were last kept at the farm (local information, *pers. comm.*). The barn was most recently used for chitting potatoes (Mr B Rowles, *pers. comm.*).

3 ARCHITECTURAL DESCRIPTION

Introduction

- 3.1 The buildings are described below in a logical sequence. The plan form, structure and architectural detailing of each building is described first, followed by the external elevations and a circulation description of the interior, from the lowest to the uppermost floor level. Reference should also be made to the ground floor plan (figure 3) and plates, and the photographic record which appears as Appendix 1; photographs are referenced in the following text in bold type and square brackets, the numbers before the stroke representing the film number and the number after indicating the frame e.g. **[5/32]**.
- 3.2 The shed, forming the eastern range of the surveyed buildings, is on a very slight north-east/south-west alignment but, for ease of description, it is considered to be aligned north-south; likewise the stables, forming the western range of the surveyed buildings, and the barn itself, are considered to be aligned north-south and east-west respectively. Unless otherwise noted, the terms used to describe surviving timber-framing and roof structures are taken from Alcock *et al* (1996) and Campbell (2000). Where possible, specific architectural terms used in the text are as defined by Curl (1977). Finally, in the following text, 'modern' is used to denote features or phasing dating to after c.1945.
- 3.3 The buildings forming the subject of the architectural survey stand at the eastern end of a complex of conjoined buildings and boundary walls, once forming a farm arranged around an open rectangular yard. The barn stood at the east end of this yard (but did not face onto it) and the main access route into the yard appears to have been along the south side of the barn, between it and Hall Farm Cottage. The farm has been substantially reduced in extent in the modern period, with several of the buildings formerly existing on the west and south sides of the farm having been demolished. Within the wider landscape, the whole is set substantially below the level of the road to the east, and the land slopes upwards onto the edge of the North Lincolnshire Wolds beyond. The grounds of the Hall lie to the south beyond Hall Farm Cottage, while there is open farmland to the north and west.

The Barn

Plan form, structure and materials

- 3.4 The barn forms the southern range of the recorded buildings, standing at the west end of the former farm and, discounting modern sheds, is by far the largest surviving building within the complex. The north elevation is butted by both the east and west ranges. The barn is slightly sub-rectangular in plan, with maximum external dimensions of 20.90m east-west by 7.80m north-south. It is of a tall single storey, with a pitched pantiled roof extending as a pantiled catslide over the north aisle **[1/327, 1/328 and 1/330]** (see plate 2); there are numerous holes in the roof, with some corrugated sheet patching. Internally, the building has a maximum total height of c.6.50m from ground floor level to the underside of the roof ridge.
- 3.5 The barn has rather narrow load-bearing external walls (average width 0.22m), although the bulk of the roof is carried on the surviving internal timber-framing. All the external walls are built of brick set with lime mortar, but there is considerable variation within the elevations, as might be expected where a former timber-framed building has been partially dismantled and encased in a piecemeal manner (see

below). Internally, the barn is open to the roof ridge and is divided into five bays of approximately equal length; the main cart entrance and former threshing floor were located in the central bay. The westernmost three bays are floored with sandstone flags [1/382], while a slightly raised concrete floor has been inserted to the easternmost two bays [1/416], although the level of the surviving flagstones indicates that the earlier floor level still sloped gently upwards from west to east.

- 3.6 The interior of the barn retains a substantial oak frame, comprising four trusses dividing the building into five bays of approximately equal length (c.4.20m east-west), although the central bay is slightly narrower (see plate 4). These are described in detail below. The frame incorporates some large timbers which have clearly been re-used from an earlier but also substantial building. The barn retains a north aisle to the interior and almost certainly once had a south aisle but this has been removed by later alterations. The alterations necessitated the introduction of softwood into the interior, and many of the original and more recent timbers have shreds of reflective material hanging off them. This remains from the last use of the building for potato chitting, when the interior was lined out and heated by three coke-burning stoves; the flues for the stoves are still visible in the roof space amongst the softwood joists used in the lining out (Mr B Rowles, *pers. comm.*). The original oak frame retains a variety of incised and written marks, some relating to its existing form but others to the earlier building from which the re-used timbers came. Some of the posts have faint and now illegible writing on them in a red paint or crayon. The use of similar red paint or crayon to mark the size of timbers, or perhaps an order number, has been noted at an early 19th century maltings in West Yorkshire (Richardson & Dennison 2010), and was also used to mark up roof trusses for assembly at a 19th century cart shed at a farm in North Yorkshire (Richardson & Dennison 2009). The red writing within the barn at Horkstow is unlikely to be for either of these purposes, but comparison with these other buildings suggests that it is 19th rather than 20th century in date.

External elevations

- 3.7 The main (north) elevation faces north onto the yard area between the barn and the east and west ranges. This elevation is low, barely 1.70m in height, as it forms the north wall of the north aisle and is therefore set beneath the aisle's catslide roof (see plate 1). There is a small central doorway, with an area of repair or alteration in machine-made brick to the east side [1/331]. Dentilled eaves run the length of the elevation, but the brickwork (and the eaves) to either side of the doorway is quite different. To the west, the elevation is built of deep red handmade bricks (average dimensions 230mm x 110mm x 60mm), laid in a variation of English garden-wall bond (three stretcher courses to each header course) [1/333 and 1/336]. To the east, the bottom 1.30m of the elevation is of the same brickwork, but above this, larger red handmade bricks are used (average dimensions 230mm x 110mm by 80mm), laid with some partial header courses but in no particular bonding pattern [1/332 and 1/335]. As a result, the dentilled eaves are set slightly lower to the east than to the west.
- 3.8 The lower part of the east gable is hidden by the raised ground level adjacent to the road. The visible upper part is built of the larger bricks noted above to the east of the doorway in the north elevation [1/348], but they are irregularly coursed; there are occasional partial header courses separated by three to five stretcher courses. There is a single window with a cambered head and projecting brick sill to the upper part of the gable, with a raking dentilled cornice above [1/349] (see plate 2).

- 3.9 The south elevation is divided into three parts by two 20th century brick buttresses which have been placed opposite two of the trusses of the internal timber-frame (see plate 2). To the east of the east buttress [1/350], the brickwork has the same irregular bonding as seen to the east gable, although the bricks are smaller and more closely resemble those used in the north elevation to the west of the doorway. There is a window with a cambered head and projecting brick sill, fitted with a 6-pane casement frame, while above the wall-plate is exposed, particularly at this western end [1/352 and 1/357]. The appearance and dimensions of the wall-plate indicate that it is likely to comprise at least part of the former south arcade plate, re-used here, and a stop-splayed scarf joint is visible in this part [1/356]. The scarf joint has the number 'IIII' scored across it, the same number as used on the truss nearest to it in the interior, although the scarf cannot be seen internally (see plate 3); in addition, the timber either side of the scarf appears different, suggesting that at least two separate timbers have been joined together. There are also likely to be other scarf joints in the wall plate which cannot at present be seen. Between the two buttresses [1/353 and 1/354], the elevation is built of similar brickwork with the same irregular bonding pattern. Within this part, there is a doorway with a depressed arched head, retaining a plank and batten stable door mounted on long strap hinges. To the west, a blocked diamond-shaped breather is visible, and above this a small hatch doorway fitted with a plank and batten door. At the west end of the elevation, beyond the western buttress, there is a second blocked diamond-shaped breather [1/358 and 1/359]. However, the brickwork within which the breather is set (occupying approximately the entire area between the western buttress and the end of the elevation) is quite different to the rest of the elevation - the bricks are similar but they are neatly laid in a distinctive Flemish bond variant of three stretchers/one header/three stretchers to each course, with the headers in alternate courses being vertically aligned. The brickwork is apparently similar to that used in the adjacent farm house to the south, and may be either a contemporary repair or an 'enhancement' of that part of the barn that was close to the house.
- 3.10 The west gable of the barn was rebuilt following partial collapse, probably during the 1950s (Mr B Rowles, *pers. comm.*), using machine-made bricks laid in a variation of English garden wall bond (three or four stretcher courses to each header course) [1/360]. There is a central ground floor doorway with a concrete lintel in the gable [1/361], leading out onto a raised concrete walkway which runs along this side of the former open yard.

Circulation: Ground floor

- 3.11 At the time of the survey, access to the interior ground floor of the barn was through the doorway in the north elevation; this door led into the central bay and was set opposite the larger doorway in the south elevation. As stated above, the westernmost three bays (including the entrance bay) are floored with sandstone flags [1/382], while a slightly raised concrete floor has been inserted to the easternmost two bays [1/416]. The majority of the flag floor appears worn, but there appear to be no significant differential areas of wear, for example, within the former central threshing bay.
- 3.12 The interior of the barn retains a substantial frame [1/422 to 1/425] with a north aisle [1/420], comprising four trusses dividing the building into five bays of approximately equal length (c.4.20m east-west), although the central bay is slightly narrower (see plate 4). All the bays are of a similar width (c.4.70m north-south) while the aisle is 2.20m wide. The trusses are numbered 'I' to 'IIII' from west to east, using incised marks usually located at the joint of the post and brace to the

tie-beam [1/392]; this numbering system is also used in the description below. To the east of the central bay, trusses III and IIII are numbered to their west faces, while to the west of the central bay, trusses I and II are numbered to their east faces, so that the upper or fair face of each truss faces into the central or threshing bay, a practice noted elsewhere in timber-framed barns (Harris 1986, 14). A number of the posts now lean quite markedly, most notably truss IIII, so that on figure 3 the arcade-plate is set some way to the south of the foot of the post.

- 3.13 All trusses are of similar form, using 'normal assembly' (Alcock *et al* 1996; Grenville 1997, 36), and are of pegged construction throughout, using round-section pegs driven from the fair or upper face as defined by the incised numbering [1/386]. All older parts of the trusses are of hardwood, probably oak, with some later softwood alterations/additions (see below). The north arcade post only survives to each truss; the arcade posts may originally have been placed on stone stylobates but the feet are now encased in chamfered concrete bases (see plate 5). At their feet, the posts have average measurements of 0.20m east-west by 0.35m north-south, but they increase in scantling towards their slightly splayed heads. There is a long, gently curvilinear brace rising from the post to the cambered tie-beam, with shorter, more steeply-angled braces from the post to the arcade plate; the arcade braces are absent from the central bay to formerly allow cart access and there is no structural evidence to suggest that they were ever present. The south end of each tie-beam is supported by a straight softwood brace rising from the south wall.
- 3.14 Above the tie-beam, the roof structure is formed by tapered principal rafters, with pegged halved-lap joints to the apex and raking struts from the tie-beam [1/387]. The Listed Building description describes the struts as being 'later' (see Appendix 3), and those to truss III are indeed nailed to the principals, but some may be original; for example, both struts to truss IIII and the south struts to trusses I and II appear to be hardwood. Each principal supports a single staggered trenched purlin; all common rafters are later softwood replacements of 20th century appearance. Between the outer trusses and the end walls of the barn, there are less substantial intermediate trusses. These are formed by tapered principals, halved and pegged at the apex, and joined by two raised collars, halved across the principals. Each principal has a single purlin clasped between itself and the lower collar [1/426 and 1/427]. Again, the Listed Building description describes these as 'later' but the principals at least appear to be hardwood, and so the intermediate trusses may also in part be original features (see Discussion and Conclusions below).
- 3.15 Described from west to east, the arcade post of truss I has a west face that has been cut with an adze [1/384] but the east face bears evidence for pit sawing, suggesting that it has been re-shaped before being re-used here. There are some roughly carved initials to the lower part of the west face. The long curvilinear brace to the tie-beam was also cut with an adze [1/385], and has the numerals '20' marked on it in red paint or crayon. The tie-beam is re-used, and has two empty mortices to either end of the soffit [1/389 and 1/390]. Approximately half way between trusses I and II, there is a splayed scarf joint to the arcade plate [1/395], apparently with sallied butts. A tenon projects from the soffit of the arcade plate in line with the east end of the scarf, while the west end is fixed by two large square-headed handmade nails hammered into the soffit. A splayed scarf joint is also visible in the south wall-plate between truss I and the west wall [1/388].
- 3.16 As with the post of truss I, the west face of the arcade post of truss II has been cut with an adze [1/393] but the east face again bears evidence for pit sawing,

suggesting that it has been re-shaped before being re-used here. The east face preserves some writing in red paint or crayon which is now illegible, while at the foot of the east face, the letters 'ICH' are painted in a transparent material, perhaps glue [1/402]. The style of the lettering suggests a pre-20th century date, but it is not known if they represent initials or perhaps even the German for 'I'. An interesting surviving detail to the south face of the post is a bulbous decorative moulding [1/396, 1/397 and 1/400], the only example of such within the timber-frame (see plate 6). The long curvilinear brace to the tie-beam has also been cut with an adze to the east face but pit sawn to the west [1/394], again suggesting that it has been re-shaped or perhaps even produced by splitting a larger brace. The cambered tie-beam is re-used, and has two empty mortices to either end of the soffit [1/398, 1/399 and 1/404].

- 3.17 The arcade post of truss III [1/405] is clearly re-used, with empty mortices to the west, north and south faces [1/406 and 1/407]. At least one earlier assembly mark is visible adjacent to one of the empty mortices, while at the top of the east face there is a let-in piece of timber shaped like a bow-tie [1/409 and 1/410]. This might represent the blocking of the lap dovetail into which one end of a tie-beam was tenoned in normal assembly, suggesting that the post could be a re-used arcade or wall plate. In contrast to the previous two trusses (I and II), the cambered tie-beam of truss III is not re-used [1/408]; a mortice partly exposed at the very south end of the soffit would have once housed the tenon of an arcade post. The arcade plate has partially rotted away between trusses III and IIII, but it remained *in situ* as recently as 2008 (Keith Miller, English Heritage, *pers. comm.*). To the immediate south of the arcade post of truss III, there is a modern upstanding softwood timber, probably the remains of a partition crossing the barn on the line of the raised concrete floor.
- 3.18 The arcade post of truss IIII [1/411 and 1/415], like that of truss III, is clearly re-used, with empty mortices to the north and south faces [1/412 and 1/413]. There was almost certainly once a brace from the post to the tie-beam but this has been removed in the past. The cambered tie-beam is also re-used, with numerous empty mortices visible in the soffit [1/414].
- 3.19 In addition to the surviving timber-frame, there are a number of other features to the interior of the barn which relate to the frame. All of the internal walls incorporate projecting brick piers which support elements of the timber-frame (see plate 4). The four piers to the north wall are aligned with the trusses and almost certainly supported the aisle-ties of the north aisle, although only the arcade posts of trusses III and IIII preserve clear evidence for a mortice to house the aisle-tie. The piers to the south wall were presumably built to replace arcade posts which had been removed, while those to the east and west walls support the outer ends of the surviving arcade plate; the pier at the west end is a relatively recent addition, built of modern machine-made bricks.
- 3.20 The brickwork to either side of the doorway in the south wall butts that of the piers to the immediate east and west, indicating that there was formerly a larger opening here of a similar width to the central bay, rising the full height of the wall to the wall-plate [1/421]. The east wall is rendered to 0.86m above floor level [1/418] and this rendering returns at the north and south ends to run part way along the north and south walls [1/417]. Over the rendering, to 1.97m above the floor level, there are the smaller red handmade bricks visible to the west of the doorway in the north external elevation, laid in a rough English garden-wall bond. Above these, the remainder of the wall is built of the same larger bricks which are visible externally to the upper part of the east gable [1/419], but here laid in a variation of English

garden-wall bond (four stretcher courses to each header course). The lower part of the west wall is also built of the smaller red handmade bricks, with the larger machine-made bricks visible externally above these [1/383]. This distribution indicates that the west gable was not entirely rebuilt in the 1950s, but that the lower part incorporates an earlier wall which was re-faced.

The Stable

Plan form, structure and materials

- 3.21 The stable forms the western range of the recorded buildings, and butts the barn to the south. The stable is L-shaped in plan, with maximum external dimensions of 13.65m north-south by 6.05m east-west; at the north end, where it returns to the west to form part of the farm's north range, the width increases to 7.60m. The stable is a single storey in height, with a pitched pantiled roof which returns to the west at its north end (see plate 7). Internally, the building is open to the roof ridge. The stable has load-bearing external walls of differing width; the east and north walls average 0.22m in width, whereas the west wall and an internal cross wall (see below) are up to 0.45m wide. All walls are built from the same deep red handmade bricks (average dimensions 230mm x 110mm x 70mm) set with a lime mortar but treated differently according to the elevation. The north and west walls rise from very slightly projecting brick plinths. Sandstone pintle blocks survive to several of the doorways.
- 3.22 The interior is formed by two spaces, a smaller southern cell and a larger cell to the north. Both are floored with a non-slip surface for horses, and the north cell has an open concrete drain running its full length to the west of centre of the floor [1/377 and 1/378]. Both cells are open to roof level, with softwood coupled rafter roof trusses, each with a pair of purlins clasped between the rafter and a raised collar, rising to a plank ridge-piece; the collars are halved and nailed to the rafters [1/375 and 1/379]. In the north cell, there is a diagonal timber where the roof returns to the west [1/381], supported on a dragon tie at the lower, north-east, end [1/380]. A few of the roof timbers bear marks in the form of rows of characters, some simple slashes, others more complex, occurring in short strings. These are characteristic of the 'Baltic timber marks', relating to the export of softwood from the Baltic into Britain through ports such as Hull. The marks were clearly made after the trees had been squared but before they were quartered or otherwise divided, as some strings are truncated to the top or bottom. They are generally thought to be put onto the timber in the Baltic ports by timber merchants there, and may denote the merchant, the port from which the timber was shipped, and/or other information.

External elevations

- 3.23 The east elevation of the stable is largely blank, broken only by a doorway towards the north end giving access to the north cell [1/329] (see plate 7). The brickwork within this elevation is laid in a distinctive bonding pattern, with three stretcher courses to a course of alternating paired headers and paired stretchers, rising to slightly projecting eaves. The eaves are carried around to the north elevation [1/337] but the bonding pattern is not; despite being built from the same bricks, the north elevation is laid in a variation of English garden-wall bond (two or three stretcher courses to each header course). Projecting bricks at the north-east corner of the stable mark where a modern wall formerly ran to the north. The north elevation has a ventilated window opening to the centre with a depressed arched head [1/338] while at the west end is the passage which marks the limit of the structures recorded during the current survey [1/339]. The doorway forming the

north end of this passage has a depressed head and the brickwork over is continuous with that of the north elevation, including the projecting eaves. The passage was clearly built against an existing structure to the west, although not necessarily that which survived in this position at the time of the survey.

- 3.24 The west elevation of the stable is built of the same brickwork as the north and east elevations, laid in an irregular bonding pattern with some partial header courses [1/362] (see plate 8). At the southern end of the elevation, there is a depressed arched headed doorway with sandstone pintle blocks, fitted with a probable 19th century plank and batten stable door [1/363]. This doorway is flanked by a small window to the south; the window has a wooden lintel and projecting brick sill and is fitted with a 6-pane casement. There was once a similar doorway at the north end of the west elevation but this was blocked, almost certainly when two windows were inserted into the wall above [1/364]. Both these windows have wooden lintels and projecting brick sills; the smaller north window is fitted with a 6-pane casement while the larger south window has a similar 16-pane frame [1/365]. The west elevation returns to the west at its north end to meet the passage. There is a small window with a projecting brick sill and casement frame in the south elevation of this short return, while the doorway to the passage stands to the west [1/366].

Circulation: Ground floor

- 3.25 At the time of the survey, the only access to the south cell was through the doorway in the west elevation. The south jamb of the doorway retains a number of portraits of horses etched into the brickwork here [1/367 to 1/370] (see plate 9). The uppermost horse is shown in profile and faces left, with the head and back being drawn; there are a series of later pencilled numerals above. The middle horse appears as a head only, facing left and apparently wearing blinkers; the numerals '47 5 87' are carved into the adjacent brick. The lowest horse also appears as a head only, facing left and wearing a harness, perhaps again with blinkers. The initials 'J E R' and numerals '16 2' can be seen to the left of the horse, while the initials 'W B' are carved onto its neck. The exact date of the carvings is unknown, but they are likely to pre-date the Second World War. Shadows to the east and north walls of the south cell show that the interior once had stalls for horses positioned along the east side [1/372]. The timber partitions of the stalls sloped downwards from east to west towards a heel post which was set 3.05m to the west of the east wall [1/373].
- 3.26 A low doorway in the north wall once gave access to the north cell [1/374]. However, at the time of the survey, the only access to the north cell was through the doorway in the east elevation. The interior of the north cell is largely sanitised and few visible features of historic interest remain. As with the south cell, there were once stalls for horses positioned along the east side, of a similar form to those described above [1/376]. There is also a small modern partitioned-off space at the north end of the west wall (not shown on figure 3). The difference in width between the east and west walls, scarring to the north internal wall, and the arrangement of the roof timbers all suggest that the west wall once ran parallel to the east wall, and that the west return of the stable running to the passage is a later addition. However, the brickwork of the external north elevation is of a single phase.

The Shed

- 3.27 As has been noted above, the shed on the east side of the complex had collapsed at some point prior to the survey, following flooding. The remainder was then partially demolished, leaving only the very north [1/345] and south [1/347] ends still standing.
- 3.28 The remains of the shed form the eastern range of the recorded buildings, and it butts the barn to the south; it was terraced into the higher ground to the east adjacent to the road and was indeed partly acting as a retaining wall. The shed was rectangular in plan, with maximum external dimensions of 17.10m north-south by 3.60m east-west, and of a single storey with a single-pitch pantiled roof sloping downwards from east to west. The surviving parts at the north end only are built of brownish-red handmade bricks (average dimensions 230mm x 110mm x 80mm), including several exhibiting signs of over-firing, with some partial header courses but no overall bonding pattern. The shed was formerly open-sided to the west and was six bays in length. The bays were divided by either timber posts or brick piers, although these were later replaced by chamfered concrete bases [1/346] supporting timber posts. Each post would have supported a simple half-truss running between the open west side and a pier to the rear (east) wall; only a single pier survived at the time of the survey (see plate 10).

Other Farm Buildings

- 3.29 Although no study of the other buildings within the farm complex was required as part of the works, a brief description is given below in order to place the barn, stable and shed within their proper structural context, and to better understand the development of the farm itself.
- 3.30 To the immediate west of the passage at the west end of the stable block described above, the former north range of the farm complex continues as a two storey building, aligned east-west and with a pitched pantiled roof [1/340 and 1/341]. This building is built entirely of deep red handmade brick, but has been subject to much alteration and change. For example, the north elevation incorporates two courses of badly over-fired headers at a lower level and is laid in a rough English garden-wall bond. By contrast, the lower brickwork of the east gable is laid in Flemish stretcher bond, and the upper part in English garden-wall bond (three to four stretcher courses to each header course). The gable steps out towards the apex, above which a lower gable line, subsequently raised with tumbled-in brickwork, is visible. There are numerous blockings and scars to both the north elevation and the east gable. The interior of the building was not inspected.
- 3.31 There was evidently once a structure to the west of the building described above, as there are a line of joist recesses on the east gable, but this has since been demolished. The structure appears to have been built against an earlier wall which incorporates a diamond-pattern breather of the same form as those surviving in the south elevation of the barn [1/342].
- 3.32 The west end of the north range is formed by a cart shed with a first floor granary over [1/343 and 1/344]. It is built of brownish red handmade bricks laid in a variation of English garden-wall bond (three or four stretcher courses to each header course) and has a hipped pantiled roof. The main (north) elevation faces north onto the open area to the north of the farm complex. Such a siting is typical; cart sheds are often north-facing, as wooden wagons are damaged by direct

sunlight, and need a large clear area to the front in which to manoeuvre the carts and wagons (Barnwell & Giles 1997, 56). The north elevation is four bays in length, each bay has a single depressed arched cart entrance standing c.2.30m high in the centre, separated from one another by tall brick piers. There is a doorway at the east end of the ground floor accessing the stairs. Above, to the first floor, there is a loading doorway to the easternmost bay, and there was once a small window to each of the three bays to the west, but only one of these remains unblocked. A first floor doorway in the east elevation may be a later insertion to provide access to the structure formerly standing to the east.

- 3.33 As has been noted above, there were once buildings ranged around the south and west sides of the open yard forming the centre of the farm complex. These have largely been demolished, although the low boundary wall now surrounding the yard partly incorporates their remains. A brick building adjacent to the south boundary wall in the garden of Hall Farm Cottage may also once have been associated with the farm.

4 WILDLIFE SURVEY

Introduction

- 4.1 As noted in Chapter 1 above, a summer bat and barn owl survey was undertaken of the farm buildings. For the purposes of the surveys, the barn was identified as Building A, the stable was Building B, and the small structure at the north end of the ruined east shed was Building C. The resulting Bat and Barn Owl Report (Holloway 2010) appears as Appendix 2, while the following text provides a summary of the findings.
- 4.2 All species of bats are protected under The Wildlife and Countryside Act 1981 and the Conservation (Natural Habitats, &c.) Regulations 1994. Under this legislation, it is an offence for any person to:
- intentionally kill, injure or take any wild bat;
 - intentionally disturb any wild bat while it is occupying a structure or place that it uses for shelter or protection;
 - intentionally damage, destroy or obstruct access to any place that a wild bat uses for shelter or protection;
 - be in possession or control of any live or dead wild bat, or any part of, or anything derived from a wild bat; or
 - sell, offer or expose for sale, or possess or transport for the purpose of sale, any live or dead wild bat, or any part of, or anything derived from a wild bat.
- 4.3 The Countryside and Rights of Way Act 2000 amends the above Wildlife and Countryside Act to also make it an offence to intentionally or recklessly damage, destroy or obstruct a place that bats use for shelter or protection.
- 4.4 Within the Wildlife and Countryside Act 1981 (as amended), barn owls are listed on Schedule 1. Under this legislation it is an offence for any person to:
- intentionally kill, injure or take any wild barn owl;
 - intentionally take, damage or destroy any wild barn owl nest whilst in use or being 'built';
 - intentionally take or destroy a wild barn owl egg;
 - have in one's possession or control a wild barn owl (dead or alive), or egg, (unless one can show that it was obtained legally);
 - intentionally or recklessly disturb any wild barn owl whilst 'building' a nest or whilst in, on, or near a nest containing eggs or young; and
 - intentionally or recklessly disturb any dependent young of wild barn owls.
- 4.5 The bat and barn owl surveys were therefore undertaken to identify any of these protected species, to have an input into the management plan, and to make appropriate recommendations for any mitigation work as part of the proposed restoration of the buildings.

Survey Results

Status of bat species and barn owls in the local/regional area

- 4.6 The buildings at Horkstow Hall Farm Cottage are within the natural range of several species of bats, with Common pipistrelle *Pipistrellus pipistrellus*, Soprano pipistrelle *Pipistrellus pygmaeus*, Noctule *Nyctalus noctula*, Leisler's bat *Nyctalus leisleri*, Brown long-eared bats *Plecotus auritus*, Natterer's bat *Myotis nattereri*,

Daubenton's bats *Myotis daubentonii*, Whiskered bats *Myotis mystacinus* and Brandt's bats *Myotis brandtii* all being recorded within 100km of the farm (see Table 1 of Appendix 2). Three species of bats, namely pipistrelles *Pipistrellus sp.*, brown long-eared bats *Plecotus auritus*, and noctules *Nyctalus noctula*, occur within a 2km radius of the site (see Table 2 of Appendix 2). It should be noted, however, that a single record for noctule *Nyctalus noctula* bats within the vicinity was extremely old (1956) and so they may therefore no longer occur in the area. No records of bats occurred within any of the buildings adjacent to Horkstow Hall Farm Cottage.

Habitat description

- 4.7 Barn A and Stable B formed part of a larger complex of agricultural buildings that were surrounded by a yard. Some residual ecological interest resided in the scattering of mature trees and small woody copse that lay within the small holding to the south and south-west of the buildings. Trees recorded here included lime *Tilia spp.*, ash *Fraxinus excelsior*, maple *Acer spp.*, aspen *Populus tremula*, hazel *Corylus avellana*, elder *Sambucus nigra*, holly *Ilex aquifolium*, beech *Fagus sylvatica* and willow *Salix spp.* Further ecological interest was provided by a small rectangular block of broadleaved woodland that occurred c.300m west-north-west of the site. Finally, the hawthorn *Crataegus monogyna* dominated hedges and occasional mature trees, including mature ash *Fraxinus excelsior*, that bordered some of fields and the main road provided additional ecological interest.
- 4.8 The buildings were otherwise mostly surrounded by large arable fields and pastures which had little ecological value. Nevertheless, the woodland block, individual mature trees and hawthorn hedges along some of field boundaries and also beside the main road are host to numerous insects and are therefore an important food source for bats. In addition, some of the short-cropped grassland areas in the some of the pastures within the vicinity may provide shelter for small mammals, and thus food for birds such as barn owls.

Bat survey - daytime inspections

Barn (Building A)

- 4.9 Although occasional gaps suitable for bat entry into potential roosts were noted in several places between the roof pantiles and walls, and within wooden lintels, no signs of any bats were recorded in the external elevations. Inside the building, the presence of cobwebs in the gaps between different parts of the timber roof framework and the junctions between the internal wooden lintels and brick walls suggest a lack of use by bats; many of the gaps were actually too small or too large for use by bats. Nevertheless, one crevice suitable for bat entry into a potential bat roost was identified at the junction between the brace and timber support immediately west of truss 1 although further examination revealed small bird droppings, probably a blue tit (see Drawing 1 in Appendix 2). Similarly, a crevice suitable for bat entry into a potential bat roost was recorded in the wooden lintel above the blocked up opening in the upper level of the eastern gable, but no signs of bats were recorded.

Stable (Building B)

- 4.10 Once again, despite some potential, no signs of any bats were recorded in the external elevations. Internally, three relatively old bat droppings were recorded on the floor below the central ridge beam in the southern half of the main room,

indicating that bats had temporarily roosted here during the summer months (see Drawing 1 in Appendix 2). In addition, occasional butterfly wings of both tortoiseshell *Aglais urticae* and peacock *Inachis io* (which are eaten by Brown long-eared bats *Plecotus auritus*) were also noted on the stone floor. Occasional gaps suitable for bat entry into potential roosts were identified between the internal gable-end wall and roof rafters that separated Stable B from Barn A, but no signs of any bats were recorded.

Shed structure (Building C)

- 4.11 No signs of any bats were recorded here.

Barn Owl survey

- 4.12 No signs of barn owls were recorded in any of the three buildings that were inspected.

Other fauna

- 4.13 Bird nest material (small twigs and branches) was recorded on the topmost purlin of the north-facing pitched roof above the support column of truss IIII in Barn A. Also, whitewash from bird droppings and evidence of nest material occurred between the corrugated sheets and main roof rafters above the same truss. More bird nest material was also recorded on the purlin and roof rafter of the south-facing pitched roof just east of truss III, and yet another bird nest was recorded in the apex where the main roof rafter approached the ridge beam at the western end of the building. Finally, occasional streaks of faint whitewash, indicative of roosting birds, were recorded on all the main trusses of Barn A.
- 4.14 In addition, pigeon feathers and a broken white egg shell (probably of a feral pigeon) were noted on the straw floor of the small room at the southern end of Stable B. Several mouse droppings were also recorded on the floor towards the edge of the main room of the stable

Interpretation / evaluation of survey results

- 4.15 Evidence from the daytime survey (12th February 2010) indicated the presence of a small, temporary, summer bat roost (preliminarily identified as brown long-eared bats *Plecotus auritus*) within the ridge beam of Stable B. No signs of bats were recorded within Barn A or Unit C and this was indicative of an absence of any roosting bats within these particular buildings. Nevertheless, the conclusion that bats are absent from Barn A must be treated with some caution as bats often use roosts temporarily during the active season (mid-April to September). Thus, it is possible that one or two bats may also roost temporarily in Barn A during the summer months, and that evidence of such use had been washed away or smothered under leaf litter/debris at the time of survey.
- 4.16 The survey also recorded several crevices suitable for bat entry into potential bat roosts within both Barn A and Stable B, and it is possible that one or two bats may roost temporarily in such areas at other times of the year. It is therefore recommended that several precautionary mitigation measures be undertaken to ensure that the status of the local population of bats is maintained prior to, during and after any proposed repair works.
- 4.17 No evidence for the presence of barn owls in any of the buildings was noted.

- 4.18 There were several constraints to the survey, one of which was that the survey took place on 12th February 2010, when bats are hibernating. Thus, external signs of summer roosting bats may have been washed away via rain etc. Another constraint was that the floor of Barn A and the floor of the small room of Stable B were partially covered with debris and straw respectively, making the detection of bat droppings on these surfaces difficult.

Impact Assessment in Absence of Mitigation

- 4.19 Short-term disturbance to the small summer bat roost within Stable B would occur from any scaffolding to the roofs and walls in order to undertake any repair works. In addition, the extra noise, vibration and dust that would occur from the presence of site operatives and machinery may also cause some disturbance.
- 4.20 Any proposed repair/renovation works would be likely to permanently remove/destroy the small summer bat roost from Stable B. In addition, the works would probably include the removal of the existing entrance / exit openings for bats that currently occur through hole(s) in the pitched pantile roof and/or between the top of the brick wall and the overhanging pantiles. This would permanently prevent bats from being able to access the main room of Stable B and thus their current roosting site(s) within the ridge beams. This may have a small adverse impact on the population of bats (preliminarily identified as brown long-eared bats *Plecotus auritus*) at the local level. A summer bat survey is recommended when the bats are at their most active (i.e. May to August), to confirm the results of the winter survey.
- 4.21 A series of mitigation measures are therefore recommended in the Bat and Barn Owl Report (see Appendix 2). These measures would depend on the scale and scope of any repair/renovation works, but may include the installation of bat boxes, the careful timing of any works to avoid the bat breeding and hibernating seasons, the use of bat-sensitive material in the repairs, the provision of various bat access routes and gaps in the repaired structures, and the use of modified 'bat' bricks. Further details are contained in Appendix 2.
- 4.22 It is further noted that, should the repair/renovation works result in the destruction of the temporary summer bat roost in Stable B (which is likely), there would be a legal requirement to apply for a Bat Licence from Natural England to cover the proposed works. The Licence would require the adoption of a mitigation strategy aimed at ensuring there was no net loss of the existing bat roost capacity in Stable B.

5 ARCHITECTURAL DISCUSSION AND CONCLUSIONS

- 5.1 One of the problems of trying to understand the origin and the development of the barn at Horkstow, and to assess its significance (see below), is the lack of published information on such buildings in North Lincolnshire when compared to other regional areas such as Pennine West Yorkshire, for example. This largely reflects a scarcity of surviving examples; distribution maps of listed aisled barns and listed timber-framed barns in England produced by English Heritage show very few examples of such in Lincolnshire (English Heritage 2006b, 18-20). There also appears to be little in the way of published information on the surviving barns themselves; one of the few references to another large standing timber-framed barn in Lincolnshire (at Great Ponton) is given by Griswold (1999, 66), but little other regional information appears to be available. Keith Miller of English Heritage kindly supplied details of relevant regional houses and barns (e.g. Miller 1991; Birdsall, Mason & McLellan 1997), but the paucity of published information means that one is still partly forced to make comparisons with barns in other parts of the region, which is not always valid as they may have been located in areas where the predominant agricultural practices were quite different.
- 5.2 It is also likely that a more detailed inspection and recording of the timber-frame of the barn at Horkstow, particularly those elements that are re-used from an earlier building, would allow a great understanding of its development to be gained. In addition, detailed documentary research would almost certainly provide further information on the layout of the farm at different periods, and perhaps also the relationship of the farm buildings shown to either side of the Ferriby road on early maps. This might, for example, enable the farmhouse or cottage that Stubbs used for accommodation whilst pursuing his anatomical studies in the village to be identified.
- 5.3 Nevertheless, the survey undertaken of the barn at Horkstow has raised a number of questions meriting further discussion. The combined structural evidence suggests that in its original form, the barn was five bays in length and probably had aisles running the full length of both the north and south sides. Assuming that the south aisle was of the same width as the north, this would give a total length of c.21.0m and total width of c.10.4m for the building, which is comparable with some large standing aisled barns in West Yorkshire, for example the probable late 16th century west barn at Headley Hall, near Thornton (Dennison, Richardson & Haigh 2001), the medieval barns excavated at the 12th century Knights Templar preceptory at South Witham, Lincolnshire (<http://community.lincolnshire.gov.uk>) and the possible medieval barn at Easington, East Yorkshire (Birdsall, Mason & McLellan 1997). The lack of braces from the posts of trusses II and III to the arcade-plate on the north side of the central bay, together with the internal butt joints flanking the doorway in the south side of the central bay, are significant. Together, they indicate that the central bay almost certainly took the form of a passage through which carts and wagons could be driven, and that one end of the bay (or perhaps both) may have formed a porch equipped with tall harr-hung doors. The porch(es) may have been gabled, like those seen on late medieval manorial tithe barns or early post-medieval aisled barns in West Yorkshire (Moir 2005) or perhaps more likely the roof over was lifted slightly to form a hood, as at Easington (Birdsall, Mason & McLellan 1997; Keith Miller, English Heritage, *pers. comm.*).
- 5.4 The extent to which the barn was fully timber-framed in its original form i.e. if the outer aisle walls and the end gables were timber-framed with an infill, is at present uncertain. In Pennine West Yorkshire, whilst there are a limited number of aisled

barns of probable late 15th or early 16th century date which may once have been fully timber-framed, the majority had internal timber-frames only with stone external walls (Clarke 1973, 25-26; Ryder 1982, 143-147). One would have expected any timber-framed external walls at the Horkstow barn to have been of a traditional 'mud and stud' form, rising either from a chalk plinth or perhaps set onto a bottom rail which was itself set on the ground (Keith Miller, English Heritage, *pers. comm.*); no such remains were recognised in the course of the survey, and they may have been entirely removed by later alterations. In contrast to the statements made in the Listed Building description (see Appendix 3), it is considered that both the raking struts of the roof trusses and the less substantial principal rafter trusses at either end of the roof may be at least in part original features. The principal rafter trusses were presumably thought to add stability to the end bays of the timber-frame; collars are sometimes seen in the same position in comparable barns to Horkstow, linking common rafters (Dennison, Richardson & Haigh 2001, 31). The form of the original roof covering is unclear, but it is most likely to have been thatched with straw or reed (Keith Miller, English Heritage, *pers. comm.*). The flagstones are the earlier floor covering but given the apparent lack of heavy wear, they are perhaps unlikely to pre-date the 18th century.

- 5.5 As regards the use of the building, limited documentary evidence survives for the detailed functioning of the different areas of both aisled and unaisled barns of the early post-medieval period in West Yorkshire; it has been suggested that the aisles of Pennine barns may have been used to house cattle rather than for crop storage (Harris 1986, 81) or possibly for a combination of both. In other areas of the country, it has been noted that an aisled barn of five bays or less usually incorporated one threshing floor, with the other areas being used for crop storage (Brown 1976, 36). The larger barns excavated at South Witham were used to store produce and equipment (<http://community.lincolnshire.gov.uk>). It seems likely that the barn at Horkstow served a similar purpose, with the central bay forming the threshing floor and access passage, and with crops being stored to either side; there is no obvious visible evidence relating to the accommodation of stock, apart from perhaps the rendering to the base of the east internal wall.
- 5.6 The Listed Building description (see Appendix 3) assigns the barn a late 16th or early 17th century date, on the basis of what was assessed as rather poor quality framing that indicated it came late in the local timber framing tradition (Keith Miller, English Heritage, *pers. comm.*). The current survey has found no evidence to contradict this, and the amount of re-used timber within the frame would also support a later rather than an earlier date. However, aisled barns are not always straightforward to date closely from structural evidence alone; for example, the earliest surviving parts of the barn at Easington were very tentatively ascribed a 14th century date (Birdsall, Mason & McLellan 1997, 3) but it displays several characteristics which might denote a post-medieval date (Ryder 1982, 147) and the frame may indeed have been extensively altered in the later 18th century (Birdsall, Mason & McLellan 1997, 3). Nevertheless, the form of the roof trusses and the braces from the posts to the tie-beams at Horkstow is very similar to those surviving within the remodelled 13th century Whiston barn in South Yorkshire. These were formerly dated to the 16th century (Ryder 1982, 144) but more recently dendrochronological sampling has placed them between 1640 and 1645 (Tyers & Groves 2002, 79). Ryder places this roof form more generally in the 16th and 17th centuries (Ryder 1982, 127), while the arcade remnants bear some similarity to the former external walls of a late 16th / early 17th century house at Goxhill, Lincolnshire (Miller 1991). It is evident that the Horkstow timber-frame incorporates large parts of an earlier substantial timber-framed building, and if the existing frame is thought to have been assembled in c.1600, then the re-used parts

are likely to have come from a re-used late medieval building. The Listed Building description states that only the easternmost pair of arcade posts are made from re-used timbers, but the different types of cutting noted to the east and west faces of the westernmost pair suggest that these have also been modified in some way, and may also be re-used.

- 5.7 Without further detailed research into the development of historic landholdings in Horkstow in the late medieval and early post-medieval periods, it is difficult to place the barn in anything other than a very broad historical and landscape setting. Two main questions remain outstanding. Who erected a substantial timber-framed barn in c.1600, and what substantial late medieval building was dismantled at about the same time to be used in the barn's structure? Given that a house was built at Horkstow between 1607 and 1620 for Sir Thomas Darrell, and it is believed to have been located on the site of the presumed medieval manorial centre near the church, was a substantial pre-existing medieval building there dismantled at the same time and partly re-used in the barn? This could explain *how* the materials became available but provides no further clue as to *why* the barn was located here. Many of the more substantial aisled-barns in West Yorkshire were associated with large houses and reflect a high level of investment in agricultural buildings in an economy that remained based on the dual occupations of industry and agriculture (Giles 1986, 128-129). The substantial Manor Farmhouse lies a short distance south of the present Horkstow Hall. It dates to the late 17th or early 18th centuries, but may have had a similarly substantial yeoman farm predecessor (Keith Miller, English Heritage, *pers. comm.*), and it is possible that the barn was associated with this, although not as closely physically associated as the houses and aisled barns of West Yorkshire. Finally, although less likely, it is possible that the barn was originally erected somewhere else in Horkstow and was then brought to its current site at a later date. Such a scenario has been proposed for the aforementioned Whiston barn but dendrochronological analysis suggested that the 13th century barn was remodelled *in situ* rather than having been moved wholesale from elsewhere (Tyers & Groves 2002, 81-83).
- 5.8 When first built, and for some time afterwards, the barn may not have had many associated buildings in the vicinity. Survey work in south Lincolnshire noted that early surviving farm buildings, principally barns and stables, had been connected with arable exploitation, with tithe map evidence suggesting that they stood in isolation and formed virtually the entire farmstead (Barnwell & Giles 1997, 45). By the late 18th century, the predominant element in the agricultural economy in Lincolnshire was grassland, used for the rearing of sheep and the finishing of cattle imported from elsewhere within England. During the early to mid 19th century, the acreage under arable cultivation expanded, and after the mid 19th century there was generally a trend towards an increase in mixed farming (Barnwell & Giles 1997, 44). It appears that at Horkstow, a mixed farm coalesced around the open yard to the west of the barn, forming what English Heritage describe as a 'loose courtyard plan', as opposed to a 'regular courtyard plan' where the various functions of the farm were carefully placed in relation to one another in order to minimise the waste of labour, and where the manure could be conserved (English Heritage 2006b, 8). Several of the buildings at Horkstow are of a form that suggests there was some expansion of the farm around the mid 19th century, including the cart shed and the stables forming the western range of the surveyed buildings. Although the thicker walls at the south end of the stable range might indicate that they incorporate parts of an older building, their overall form and single storey height is characteristic of mid 19th century examples in south Lincolnshire (Barnwell & Giles 1997, 53). The open-fronted shed forming the east

range of the surveyed buildings may have been used as an implement shed, and probably dates to the mid to late 19th century.

- 5.9 The development of a mixed farmstead based around an open yard to the west of the barn clearly had an effect upon the barn itself. The main access into the yard appears to have been along the south side of the barn, and the creation of this access may have been the reason that the south aisle was demolished; any porch structure that might have been present here would have been removed at the same time. The surviving brickwork of the barn suggests that there were two main phases of alteration to the timber-frame. The smaller bricks evident to the west of the doorway in the north elevation, at the base of the east and west walls, and within the south elevation represent the earlier phase, perhaps associated with the demolition of the south aisle and the replacement of timber-framing in the external walls. This could have been carried out in the late 18th or early 19th centuries, perhaps around the time that the adjacent farmhouse was built (Keith Miller, English Heritage, *pers. comm.*). The larger bricks to the east of the doorway in the north elevation, in the upper part of the east gable, and in parts of the south elevation are probably mid to late 19th century in date, and are perhaps contemporary with the development of the yard to the west. The windows associated with this brickwork have brick sills like those to the stables, and it may be that the two structures are near contemporary.
- 5.10 However, within these two main phases there were almost certainly several other sub-phases of alteration to the barn. For example, why is Flemish bond used only to the western part of the south elevation? Was this more visible than the rest, perhaps because the south aisle was not demolished in a single action but in parts, with the brickwork to the central and eastern parts of the elevation being inserted when the remainder of the aisle was removed at a later date? After the demolition of the aisle was complete, was the central bay left open at the south end to allow wagon access from the main trackway into the farmstead and then blocked at a later date?
- 5.11 The changes to the barn's structure would have had a marked effect upon the agricultural usage to which it was put. The removal of the large porches and doorways suggested to have existed in the central bay would have severely curtailed wagon access, although as noted above, there may still have been access through the south side of the central bay. The retention of opposed doorways in the central bay may indicate that minor threshing activities took place here but as the 19th century progressed such activities would have become increasingly mechanised. It is possible that fodder preparation machinery was installed in the barn in the later 19th century, and there may well also have been some temporary sub-division of the interior which has left little or no physical trace. The barn appears to have undergone its last major scheme of repair / alteration during the 1950s, principally the rebuilding of the west gable, and it was most recently used for chitting potatoes.

6 STATEMENT OF SIGNIFICANCE

- 6.1 The Natural England project brief (see Appendix 4) also required the preparation of a Statement of Significance, which would 'assess the structure [of the recorded buildings] from both a local and regional perspective, and a comment on the contribution of the building to the local landscape character, public amenity and biodiversity'.
- 6.2 When assessing the significance of the barn and associated buildings, it is of course impossible (and would be gravely mistaken) to not consider them as part of the wider local and regional landscape. As has been noted above, the limited research undertaken for this report has not been able to reconstruct the major landholdings within Horkstow in the late medieval and early post-medieval periods. Nevertheless, through further research and detailed recording of the timber-frame, it is clear that the barn has potential to further the understanding of these landholdings, both in terms of what kind of late medieval structure was dismantled to be re-used within the barn, and also to demonstrate the scale of resources available to the early post-medieval landowner who erected it.
- 6.3 Furthermore, available secondary publications indicate that, even allowing for the loss of perhaps half of the original framing, the building is a rare example of a surviving substantial timber-framed aisled barn within Lincolnshire, resulting in a high local and regional significance. The barn, and the associated buildings, have the potential through further study to demonstrate how a farmstead developed on the same site and responded to changing agricultural practices over the period c.1600 to 2000, allowing comparison with farmsteads that developed after c.1800 but not around an earlier core, and also those now surviving only as buried archaeological remains from the period before c.1600.
- 6.4 In terms of its contribution to the local landscape character, the barn is a prominent feature at the northern end of the village, and is highly visible from the adjacent road. However, this contribution extends beyond the historical, structural and agricultural. There is reasonable circumstantial evidence to believe that this is the building where George Stubbs carried out his anatomical studies of horses, and thus the barn also has some art-historical / cultural importance, considerably enhancing its local and regional significance. If the link with Stubbs could be definitively proved, then the significance would be enhanced further.

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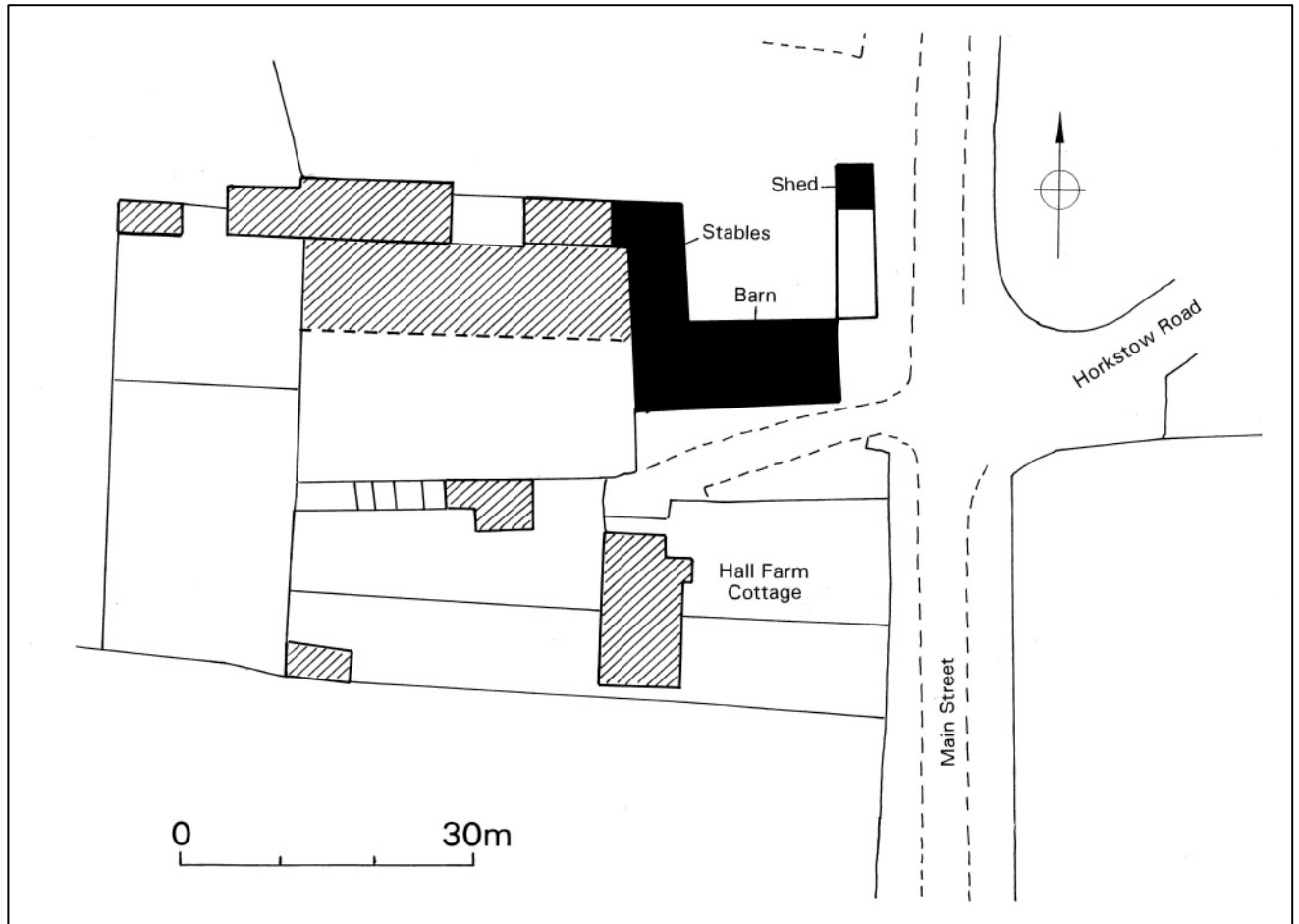
8 ACKNOWLEDGEMENTS

- 8.1 The architectural and wildlife survey at Horkstow barn was commissioned by the owner, Mr B Rowles, via the project architect Peter Gaze Pace, and was funded by Natural England. EDAS would like to thank Mr Rowles, Peter Pace and Dr Margaret Nieke of Natural England for their assistance and co-operation in carrying out the survey work. Keith Miller from English Heritage also commented on the draft report, and provided much local information both relating the barn itself and other regional examples of timber-framed structures - his assistance is greatly appreciated.
- 8.2 The architectural survey was undertaken by Shaun Richardson assisted by Richard Lamb; Shaun Richardson produced the site archive and a draft report. The wildlife survey was undertaken by Dr Madeline Holloway of Ecological Information Network Consultants (EINC), and she also produced the stand-alone wildlife report. The final report was produced by Ed Dennison of EDAS, with whom the responsibility for any errors remains.



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PROJECT		HORKSTOW BARN	
TITLE		GENERAL LOCATION	
SCALE		NTS	DATE APR 2010
EDAS		FIGURE 1	



Based on site plan provided by Client.

PROJECT		HORKSTOW BARN	
TITLE		SURVEYED BUILDINGS	
SCALE	AS SHOWN	DATE	APR 2010
EDAS		FIGURE	2

PROJECT	HORKSTOW BARN		
TITLE	GROUND FLOOR PLAN		
SCALE	AS SHOWN	DATE	ARP 2010
	EDAS	FIGURE	3

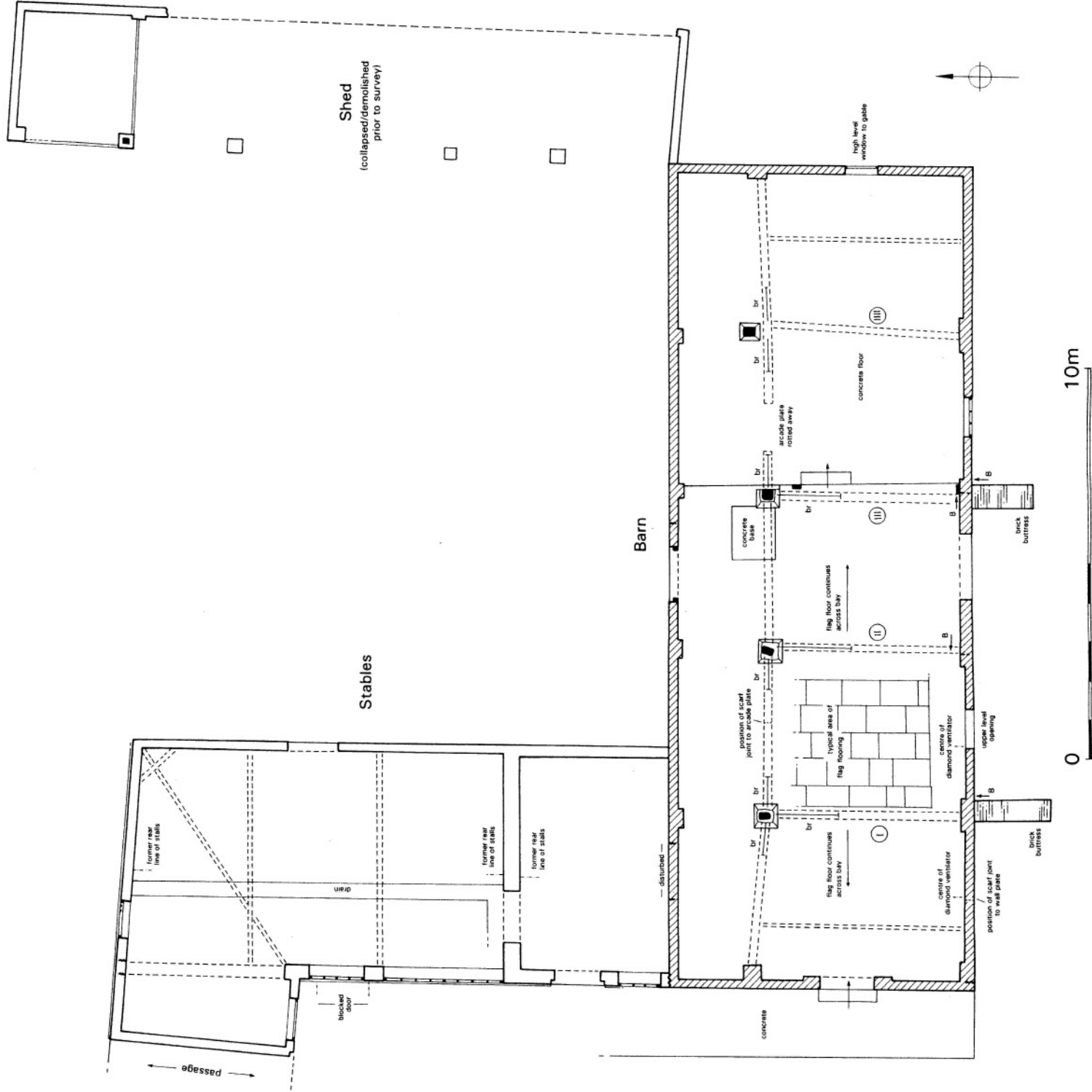




Plate 1: North elevation of barn, looking SW (photo 1/328).



Plate 2: East gable and south elevation of barn, looking NW (photo 1/348).



Plate 3: Exposed scarf joint to wall plate, south elevation of barn (east end), looking N (photo 1/356).



Plate 4: Interior of barn, looking E (photo 1/422).



Plate 5: Brace, post and tie-beam of truss I, looking NE (photo 1/386).



Plate 6: Moulding to south face of post of truss II, looking NE (photo 1/397).



Plate 7: East elevation of stable, looking W (photo 1/329).



Plate 8: West elevation of stable, looking N (photo 1/362).



Plate 9: Horse graffiti, south jamb of doorway in west elevation of stable, looking S (photo 1/367).



Plate 10: North end of shed, looking NE (photo 1/345).

APPENDIX 1
PHOTOGRAPHIC RECORD

Horkstow Barn Photograph Catalogue

Film 1: Colour digital photographs taken 9th November 2009

Film	Frame	Subject	Scale
1	327	N elevation of barn, looking S	1m
1	328	N elevation of barn, looking SW	1m
1	329	E elevation of stable, looking W	1m
1	330	N elevation of barn, looking SW	1m
1	331	Opposed doorways of central bay, N elevation of barn, looking S	1m
1	332	Dentilled eaves to E of doorway, N elevation of barn, looking S	-
1	333	Dentilled eaves to W of doorway, N elevation of barn, looking S	-
1	335	Dentilled eaves to E of doorway, N elevation of barn, looking SE	-
1	336	Dentilled eaves to W of doorway, N elevation of barn, looking SW	-
1	337	Stables, N elevation, looking SW	1m
1	338	Slatted ventilator, N elevation of stables, looking S	-
1	339	Entrance to passage and N elevation of stables, looking E	1m
1	340	W gable of building to immediate W of stables, N range of farm, looking SE	1m
1	341	Building to immediate W of stables, N range of farm, looking SE	1m
1	342	Wall to E of cartshed, N range of farm, looking S	1m
1	343	E gable of cartshed, N range of farm, looking W	1m
1	344	N elevation of cartshed, N range of farm, looking SW	1m
1	345	N end of shed, looking NE	1m
1	346	Former position of shed, looking N	1m
1	347	S end wall of shed, looking SE	1m
1	348	E gable of barn, looking NW	1m
1	349	E gable of barn, looking W	1m
1	350	E end of S elevation of barn, looking N	1m
1	352	Exposed wall plate and truss end, S elevation of barn (E end), looking N	-
1	353	Central part of S elevation of barn, looking N	1m
1	354	Central and E parts of S elevation of barn, looking NE	1m
1	356	Exposed scarf joint to wall plate, S elevation of barn (E end), looking N	-
1	357	Exposed wall plate and truss end, S elevation of barn (E end), looking N	-
1	358	W end of S elevation of barn, looking N	1m
1	359	Diamond ventilator, W end of S elevation of barn, looking N	-
1	360	W gable of barn, looking E	1m
1	361	Doorway, W gable of barn, looking E	1m
1	362	W elevation of stables, looking N	1m
1	363	Doorway, W elevation of stables, looking NE	1m
1	364	Windows and blocked doorway, W elevation of stables, looking E	1m
1	365	Window, W elevation of stable, looking NE	1m
1	366	Doorway, S end of passage at W end of stables, looking N	1m
1	367	Horse graffiti, S jamb of doorway, W elevation of stable, looking S	-
1	368	Horse graffiti, S jamb of doorway, W elevation of stable, looking S	-
1	369	Horse graffiti, S jamb of doorway, W elevation of stable, looking S	-
1	370	Horse graffiti, S jamb of doorway, W elevation of stable, looking S	-
1	372	Former stalls, E wall of S stable cell, looking E	1m
1	373	Former stalls, N wall of S stable cell, looking N	1m
1	374	S stable cell, looking W	1m
1	375	Roof structure over S cell of stable, looking SE	-
1	376	N stable cell, looking S	1m
1	377	N stable cell, looking NW	1m
1	378	N stable cell, looking N	1m
1	379	Roof structure, N stable cell, looking N	1m
1	380	Trimmer, NE corner of N stable cell, looking NE	1m
1	381	Roof structure, N stable cell, looking W	1m
1	382	Typical flagstone paving, barn interior, looking NE	1m
1	383	W interior wall of barn, looking W	1m
1	384	Post of truss I, W face, looking E	1m
1	385	Brace, post and tie-beam of truss I, looking E	-
1	386	Brace, post and tie-beam of truss I, looking NE	1m
1	387	Roof structure of truss I, looking E	-

1	388	Scarf joint, S wall plate of barn, looking S	-
1	389	N end of soffit of tie-beam of truss I, looking E	-
1	390	S end of soffit of tie-beam of truss I, looking E	-
1	392	Assembly marks, E face of post of truss I, looking W	-
1	393	Post of truss II, W face, looking E	1m
1	394	Brace, post and tie-beam of truss II, looking E	1m
1	395	Scarf joint to arcade plate between trusses I and II, looking N	-
1	396	Brace, post and tie-beam of truss II, looking E	1m
1	397	Moulding to S face of post of truss II, looking NE	-
1	398	N end of soffit of tie-beam of truss II, looking E	-
1	399	S end of soffit of tie-beam of truss II, looking E	-
1	400	Moulding to S face of post of truss II (N end), looking W	-
1	402	Lettering to E face of post of truss II, looking W	-
1	404	Roof truss to truss II, looking W	-
1	405	Post and brace of truss III, W face, looking E	-
1	406	Post, brace and tie-beam of truss III, looking NE	-
1	407	Post, brace and tie-beam of truss III, looking NE	-
1	408	Roof truss of truss III, looking E	-
1	409	Post, brace and tie-beam of truss III, E face, looking NW	1m
1	410	Post, brace and tie-beam of truss III, E face, looking NW	1m
1	411	Post of truss IIII, W face, looking E	1m
1	412	Post, braces of truss IIII, looking NE	1m
1	413	Post of truss IIII, S face, looking N	1m
1	414	Roof truss of truss IIII, looking NE	1m
1	415	Post of truss IIII, looking NW	1m
1	416	Barn interior, looking W	1m
1	417	Barn interior, E end of S wall, looking S	1m
1	418	Barn interior, E wall, looking E	1m
1	419	Barn interior, upper part of E wall, looking E	1m
1	420	N aisle to barn interior, looking W	-
1	421	Barn interior, central part of S wall, looking SW	1m
1	422	Barn interior, looking E	1m
1	423	Barn interior, looking E	1m
1	424	Barn interior, looking NE	1m
1	425	Barn interior, looking NE	1m
1	426	W end roof truss, looking W	-
1	427	W end roof truss, looking up	-



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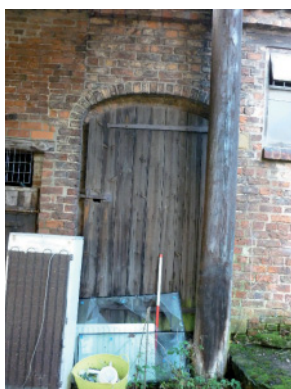
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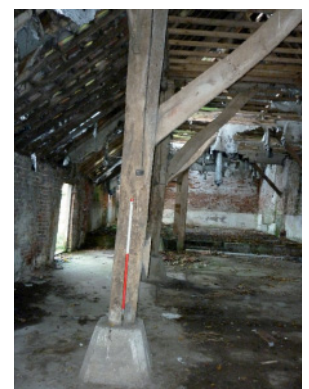
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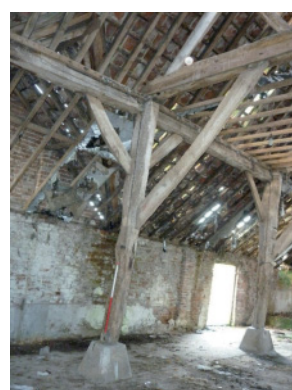
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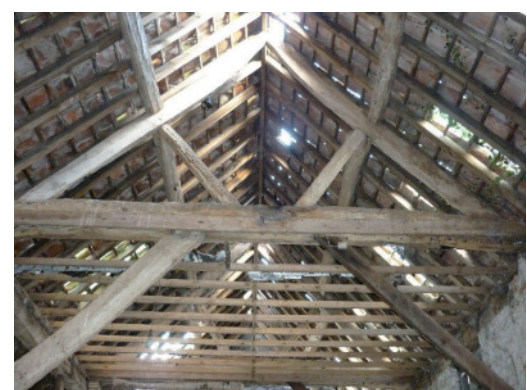
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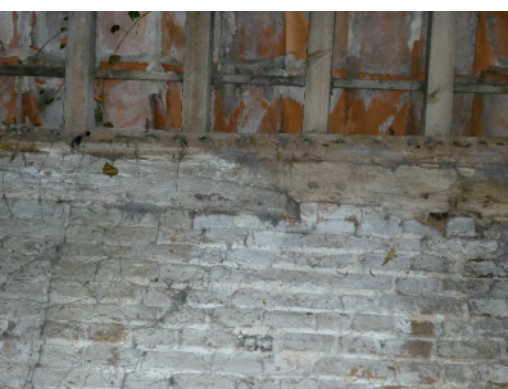
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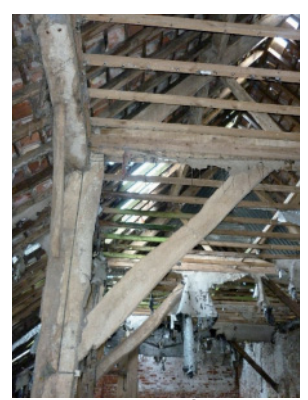
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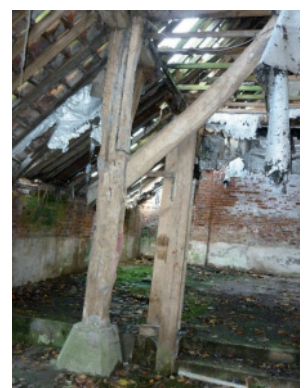
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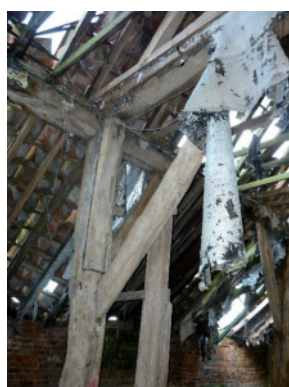
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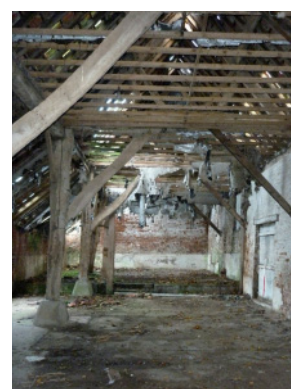
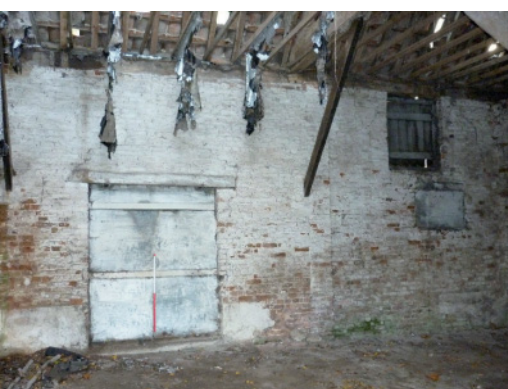
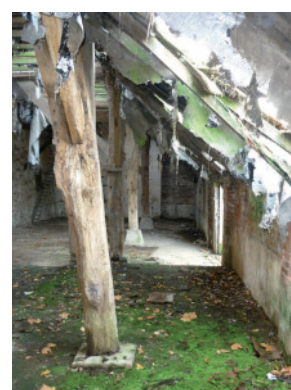
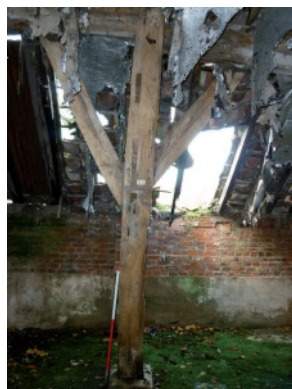
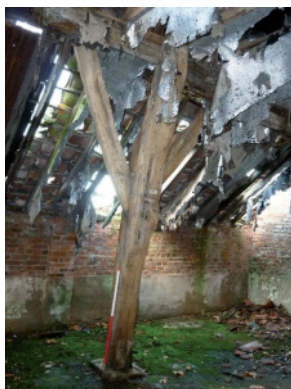
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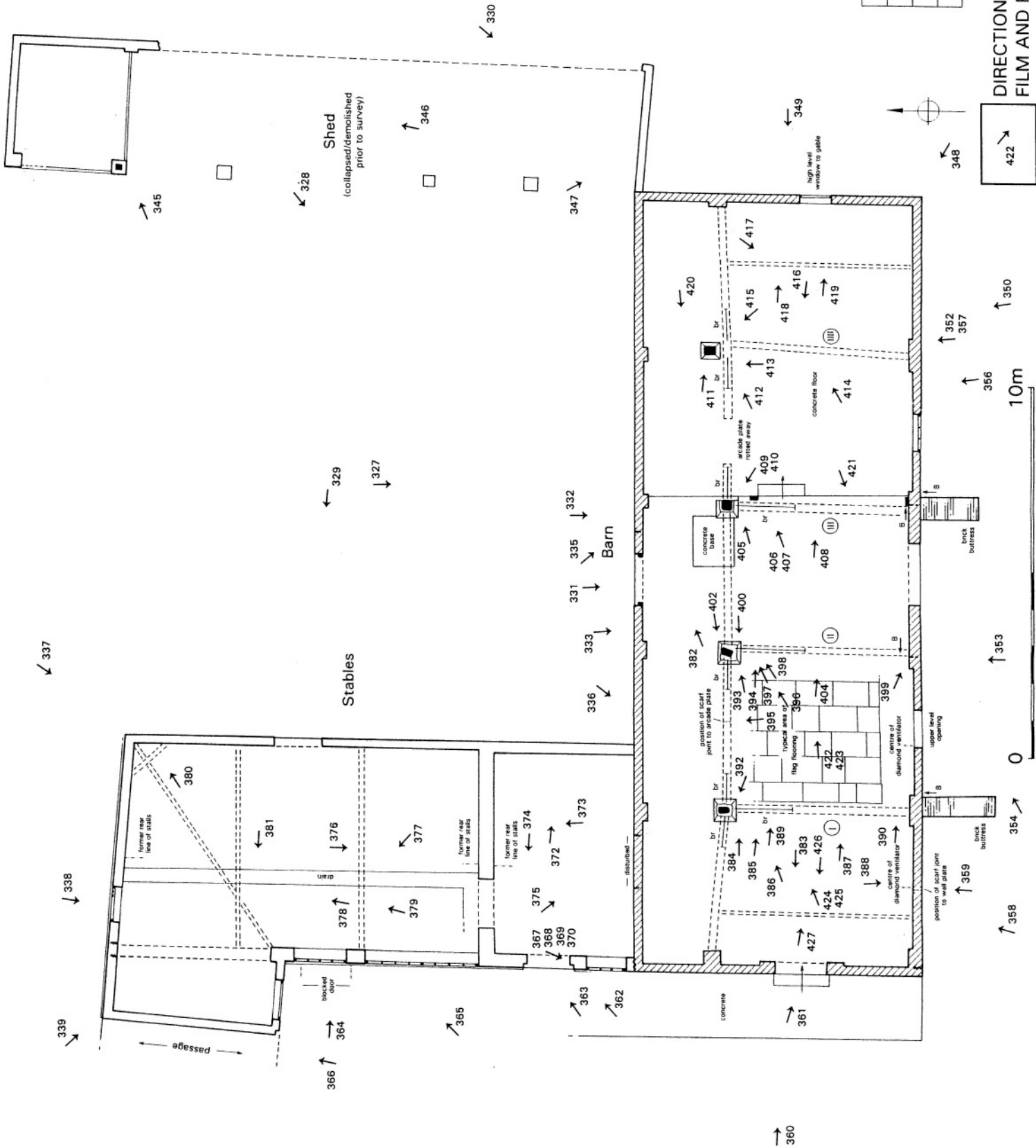


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PROJECT	HORKSTOW BARN		
TITLE	PHOTOGRAPHIC LOCATIONS		
SCALE	AS SHOWN	DATE	ARP 2010
	EDAS	FIGURE	AP1/1



DIRECTION OF PHOTOGRAPH WITH
FILM AND PHOTO NUMBER

APPENDIX 2
BAT AND BARN OWL REPORT



**BARN AND STABLE AT HORKSTOW
HALL FARM COTTAGE**

Bat and Barn Owl Report

February 2010



BAT AND BARN OWL REPORT

Barn and Stable adjacent to Horkstow Hall Farm Cottage

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1 INTRODUCTION

1.1 Background to activity

- 1.1.1 At the request of Ed Dennison Archaeological Services (EDAS), EINC was commissioned on 22nd October 2009 to undertake a winter bat survey and a barn owl survey of the barn and stable adjacent to Horkstow Hall Farm Cottage, Main Street, Horkstow, North Lincolnshire. The L-shaped buildings considered for repair (known as Barn A and Stable B in this report), are one of a number of historic farmsteads in North Lincolnshire. The work required to bring the buildings back to good repair has not yet been fully identified but is likely to include both roof and wall renovations.
- 1.1.2 The objectives of the surveys were to provide the information required for an evaluation of bat species and barn owls within Barn A and Stable B and also in the immediate vicinity. This was to be used to help identify and assess the nature conservation interest of the buildings and inform the likely impact(s) of any proposed barn repair works.

1.2 Legislation

Bats

- 1.2.1 All species of bats are protected under The Wildlife and Countryside Act 1981 and the Conservation (Natural Habitats, &c.) Regulations 1994. Under this legislation it is an offence for any person to intentionally kill, injure or take any wild bat; to intentionally disturb any wild bat while it is occupying a structure or place that it uses for shelter or protection; to intentionally damage, destroy or obstruct access to any place that a wild bat uses for shelter or protection; to be in possession or control of any live or dead wild bat, or any part of, or anything derived from a wild bat; or to sell, offer or expose for sale, or possess or transport for the purpose of sale, any live or dead wild bat, or any part of, or anything derived from a wild bat.
- 1.2.2 The Countryside and Rights of Way Act 2000 amends the Wildlife and Countryside Act to also make it an offence to intentionally or recklessly damage, destroy or obstruct a place that bats use for shelter or protection.

Barn owls

- 1.2.3 Within the Wildlife and Countryside Act 1981 (as amended), barn owls are listed on Schedule 1. Under this legislation it is an offence for any person to intentionally kill, injure or take any wild barn owl; intentionally take, damage or destroy any wild barn owl nest whilst in use or being 'built'; intentionally take or destroy a wild barn owl egg; have in one's possession or control a wild barn owl (dead or alive), or egg, (unless one can show that it was obtained legally); intentionally or recklessly disturb any wild barn owl whilst 'building' a nest or whilst in, on, or near a nest containing eggs or young; and intentionally or recklessly disturb any dependent young of wild barn owls
- 1.2.4 Anyone found guilty of an offence is liable to a fine of up to £5000 or to imprisonment for a term not exceeding six months, or both. The species is relatively abundant within some areas of Yorkshire. On a national scale it is

BAT AND BARN OWL REPORT

Barn and Stable adjacent to Horkstow Hall Farm Cottage, North Lincolnshire

listed on the RSPB's amber list, classed as a species that has undergone a moderate (25-49%) contraction of UK breeding range over the last 25 years and a species with unfavourable conservation status in Europe.

2 SURVEY AND RESULTS

2.1 Status of bat species and barn owls in the local/regional area

2.2.1 The barns at Horkstow Hall Farm Cottage are within the natural range of species of bats listed in Table 1.

Table 1 Bat species within 100km of the barns at Horkstow Hall Farm Cottage

Species	National status
Common pipistrelle <i>Pipistrellus pipistrellus</i>	Widespread and common
Soprano pipistrelle <i>Pipistrellus pygmaeus</i>	Widespread and common
Noctule <i>Nyctalus noctula</i>	Widespread but uncommon
Leisler's bat <i>Nyctalus leisleri</i>	Widespread but rare
Brown long-eared bats <i>Plecotus auritus</i>	Widespread and common
Natterer's bat <i>Myotis nattereri</i>	Widespread but frequent
Daubenton's bats <i>Myotis daubentonii</i>	Widespread and common
Whiskered bats <i>Myotis mystacinus</i>	Widespread but scarce
Brandt's bats <i>Myotis brandtii</i>	Widespread but scarce

2.2.2 Records received from the Lincolnshire Data Records Centre are summarised in Table 2.

Table 2 Bat species records received from the Lincolnshire Records Centre within 2km radius of the buildings at Horkstow Hall Farm Cottage

Species	Site	Grid ref.	Date	Comment
Chiroptera	Horkstow	SE 987 179	2002	Present
Chiroptera	Horkstow	SE 987 179	2004	2 counted
Chiroptera	Horkstow	SE 987 179	2004	2 counted
Chiroptera	Horkstow	SE 987 179	2004	1 counted
Chiroptera	Horkstow	SE 987 179	2005	Present
Chiroptera	Horkstow	SE 987 179	2006	Present
Chiroptera	Horkstow	SE 987 179	1999	Present
Noctule <i>Nyctalus noctula</i>	South Ferriby	SE 98 20	1956	Present
Pipistrelle <i>Pipistrellus spp.</i>	South Ferriby	SE 98 20	1977	Present
Brown long-eared bat <i>Plecotus auritus</i>	South Ferriby	SE 988 212	2001	1 counted
Chiroptera	South Ferriby	SE 988 212	2001	Present
Brown long-eared bat <i>Plecotus auritus</i>	South Ferriby	SE 988 208	1999	Present
Chiroptera	Horkstow	SE 987 179	2007	1 counted

- 2.2.3 Table 2 indicates that three species of bats, namely pipistrelles *Pipistrellus* sp., brown long-eared bats *Plecotus auritus* and noctules *Nyctalus noctula*, occur within a 2km radius of the site. It should be noted, however, that the single record for noctule *Nyctalus noctula* bats within the vicinity was extremely old (1956) and that such bats may therefore no longer occur in the area. No records of bats occurred within any of the buildings adjacent to Horkstow Hall Farm Cottage.
- 2.2.4 The Lincolnshire Data Records Centre had no information for barn owls, either within the buildings adjacent to Horkstow Hall Farm Cottage or within a 2km radius of the site.

2.2 Survey area

- 2.2.1 The location of the buildings adjacent to Horkstow Hall Farm Cottage, Main Street, North Lincolnshire, are shown in the aerial photograph of Figure 1 and they occur at Grid Reference SE 986 193. As noted in paragraph 1.1.1, for descriptive purposes the buildings are labelled Barn A and Stable B, as illustrated in Figure 2.

2.3 Habitat description

- 2.3.1 Barn A and Stable B, adjacent to north of Horkstow Hall Farm Cottage, formed part of a larger complex of agricultural buildings that were surrounded by a yard. Some residual ecological interest resided in the scattering of mature trees and small woody copse that occurred within the small holding to the south and southwest of the buildings. Trees recorded here included lime *Tilia* spp., ash *Fraxinus excelsior*, maple *Acer* spp., aspen *Populus tremula*, hazel *Corylus avellana*, elder *Sambucus nigra*, holly *Ilex aquifolium*, beech *Fagus sylvatica* and willow *Salix* spp. Further ecological interest was provided by a small rectangular block of broadleaved woodland that occurred approximately 300m west, northwest, of the site. Finally, the hawthorn *Crataegus monogyna* dominated hedges and occasional mature trees, including mature ash *Fraxinus excelsior*, that bordered some of fields and the main road provided additional ecological interest.
- 2.3.2 The buildings were otherwise mostly surrounded by large arable fields and pastures which had little ecological value, as shown in the aerial photo of Figure 1. Nevertheless, the woodland block, individual mature trees and hawthorn hedges along some of field boundaries and also beside the main road are host to numerous insects and are therefore an important food source for bats. In addition, some of the short-cropped grassland areas in the some of the pastures within the vicinity may provide shelter for small mammals, and thus food for birds such as barn owls.

2.4 Field Survey

Bats Methodology – daytime inspection

- 2.4.1 A daytime external and internal inspection for bats at Barn A and Stable B (Figure 2, Drawing No. 1), was undertaken on the 12th February 2010. In February bats are likely to be using their winter hibernation roosts and evidence of their presence therefore includes:

- Presence of bats – bats may be recorded roosting in small cracks within the external or internal brick/stone walls of the buildings and/or retaining wall(s), at the junction of wall(s) with ceiling(s), window and/or door lintels and adjacent brickwork/stonework.
- Staining – where sites are used heavily by bats the brick/stone around the roost entrance may become stained with oil from the bats fur. Scratches on the brick/stone worn smooth by the passage of bodies would also be used as evidence where this was attributable to bats rather than roosting or nesting birds.
- Droppings – bat droppings in crevices, stuck to walls below suitable crevices, and on the ground below suitable crevices. However, droppings may have been washed away by rain and bad weather, which occurred prior to the survey.

2.4.2 Each part of Barn A and Stable B was systematically searched for bats, bat droppings and any other signs beneath potential bat roost sites. Accessible cracks for bats were examined with the use of a Clulite Lamp (1,000,000 candle power). Ladders were used to access the various crevices between the walls as well as parts of the internal pitched roofs.

Barn Owls Methodology

2.4.3 The buildings were searched for barn owls, barn owl droppings, pellets, feathers and/or nest debris as evidence of day-time roosts and/or nesting sites.

Working procedures

2.4.4 Each surveyor had a fully charged mobile phone and a torch. Access to the site was along a road and a first aid kit was available on-site.

2.5 Survey results

Bats

2.5.1 For an aerial photo and site location plan refer to Figure 1. For descriptive purposes the two buildings proposed for repair were labelled Barn A, and Stable B respectively. These are illustrated in the close-up aerial photo of Figure 2 and also in the plan of the buildings illustrated in Drawing No. 1. A partly demolished shed (Unit C) was also surveyed for this report. The following description outlines each different aspect of the buildings and whether there were any signs of bats:

Barn A

External - northern elevation

2.5.2 This was a single storey, tall, barn with a double, north-facing pitched, red pantile roof (Plate 1). The roof was broken in several places, and whilst some holes had been patched with corrugated iron sheets, others remained open.

In addition, two flue pipes extruded from the roof and the damp, partly broken, ridge tiles were covered with moss. A wooden lintel occurred over the large open door of this elevation and the red brick walls (c. 35cm wide) were topped by a single-layered brick stringcourse just under the eaves. Occasional gaps suitable for bat entry into potential roosts were noted between the roof pantiles and wall but no signs of bats were recorded.

2.5.3 No signs of bat were recorded.

External – east elevation

- 2.5.4 A brick, gable-end, wall occurred here with a blocked-up window with a gently arched brick lintel. Occasional gaps suitable for bat entry into potential bat roosts occurred in the pointing between the roof pantiles and brick wall but no signs of bats were recorded. Self-seeded sapling ash *Fraxinus excelsior* was recorded adjacent to the building in this location.

External – south elevation

- 2.5.5 The height of the external brick wall, which was supported by two brick buttresses, increased from c. 2.5m at the eastern edge to >4m at the western edge. A single, glass-paned window with wooden lintel occurred in the eastern half of the elevation whilst a window opening (blocked with wood) and also with a wooden lintel occurred in the upper level of the western half of the elevation. A large wooden door occurred in the central part of the elevation with a gently arched brick lintel.
- 2.5.6 A large, old, wall plate was visible above the brick wall together with the remains of a gutter attached to protruding roof rafters, all sat just underneath the overhanging roof pantiles. Whilst several gaps suitable for bat entry into potential bat roosts were visible within the wooden lintels, between the pantiles and wall plate no signs of bats were recorded. However, the crevices between adjacent bricks within the wall were too small for bat entry. Self-seeded sapling ash *Fraxinus excelsior* was recorded adjacent to the building in this location and some ivy had grown up part of the wall.
- 2.5.7 No signs of bats were recorded.

External – west elevation

- 2.5.8 A brick, gable-end, wall occurred here with a door and wooden lintel. No gaps occurred in the pointing between the roof pantiles and brick wall and no signs of bats were recorded.

Internal

- 2.5.9 The uninsulated, pantile, roof was visible from the floor of this building and it was supported by four main trusses as shown in Drawing No. 1. A single purlin supported the roof rafters of the single, south-facing, pitched roof whilst two purlins supported the double-pitched, north-facing roof. Each main truss was supported by a large, timber, support column under the north-facing, double pitched, roof. Old wiring indicated that the building had, at some point in the past, been supplied with electricity. Most of the gaps at the junctions between the different parts of the timber roof framework and the junctions

between the internal wooden lintels and brick walls were sub-optimum for bats, being either too big or too small. Cobwebs were recorded in many of these gaps, further indicating lack of use by bats.

2.5.10 Nevertheless, one crevice suitable for bat entry into a potential bat roost occurred at the junction between the brace and timber support immediately west of Truss No. 1 (Drawing No. 1 and Plate 2). However, on further examination the droppings at this location (both within the crevice and on the floor below) were identified as belonging to a small bird e.g. blue tit. Similarly, a crevice suitable for bat entry into a potential bat roost was recorded in the wooden lintel above the blocked up opening in the upper level of the eastern gable end. No signs of bats, however, were recorded at this location (Plate 3).

2.5.11 No signs of bats were recorded on any of the internal surfaces. It should be noted that the floor of Barn A was often partially covered in leaf litter, soil and broken pantiles, making it difficult in places to detect the presence of bat droppings (if any) on this surface.

Stable B

External – east elevation

2.5.12 This single storey former stable was attached at right-angles along its south elevation to Barn A. A single hole was visible within the east-facing red pantile, pitched, roof and occasional transparent pantiles were also scattered throughout the roof. The brick wall (c. 35cm wide) was topped by a double-layered brick stringcourse at the eaves level. Occasional gaps suitable for bat entry into potential roosts were noted between the roof pantiles and wall but no signs of bats were recorded. A wooden lintel occurred over the single door of this elevation.

2.5.13 No signs of bat were recorded.

External – north elevation

2.5.14 The northern elevation was contiguous with another agricultural building, as shown in Figure 2 and Drawing No. 1. A single, blocked up, window with a gently arched brick lintel occurred within this elevation. The brick wall was topped by a three-layered brick stringcourse at the eaves level, just below the slightly overhanging red pantiles.

2.5.15 No signs of bats were recorded

External – west elevations

2.5.16 A brick, gable-end, wall separated the northern end of Stable B from a narrow passageway and another agricultural building further west (Figure 2 and Drawing No. 1). However, where Stable B was at right angles to Barn A, a row of windows with wooden lintels and brick sills occurred on the west elevation. Most of these windows had glass panes within them but some of the panes had been broken. Once again the walls were constructed of red brick, with a two-layered brick stringcourse visible above the wooden lintels, just below the slightly overhanging pantiles. A large wooden door, with a gently arched brick lintel, led into a separate unit at the southern end of Stable

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Barn and Stable adjacent to Horkstow Hall Farm Cottage, North Lincolnshire

B. A large open barn, with a gently sloping corrugated sheet roof supported by old telegraph poles, had been constructed adjacent to the southern and western elevations of Stable B as shown in Figure 2.

2.5.17 No signs of bats were recorded.

External – south elevation

2.5.18 Only a very small section of Stable B had an external southern elevation, as shown in Drawing No. 1. Nevertheless, this part of the building was also constructed with a red brick wall and had a window (with some broken panes). Above the window was a wooden lintel and a double-layered brick stringcourse, and below the window was a brick sill.

2.5.19 No signs of bats were recorded.

Internal

2.5.20 The uninsulated, pantile, roof was visible from the floor of this building, which was divided into two rooms by an internal wall as shown in Drawing No. 1. The larger, main, room to the north was supported by two main trusses to which florescent light columns were attached. In the north-western corner a small, internal, "office" was sealed off from the main room by a locked door. Similar to Barn A most of the gaps at the junctions between the different parts of the timber roof framework and the junctions between the internal wooden lintels and brick walls were sub-optimum for bats, being either too big or too small.

2.5.21 Nevertheless, three relatively old bat droppings were recorded on the floor below the central ridge beam in the southern half of the main room. The indication was that bats had temporarily roosted during the summer months between the ridge beam and red pantiles of Stable B at the locations shown in Drawing No. 1 and Plate 4. In addition, occasional butterfly wings of both tortoiseshell *Aglais urticae* and peacock *Inachis io* (which are eaten by Brown long-eared bats *Plecotus auritus*) were also noted on the stone floor.

2.5.22 Old machinery and furniture occurred in the smaller room further south and the floor was also mostly covered by a layer of straw, making it difficult to detect bat droppings on this surface. The electric mains was located in this room, which was very damp in its south-eastern corner where hart's tongue *Phyllitis scolopendrium* was recorded growing out of the wall. Occasional gaps suitable for bat entry into potential roosts occurred between the internal gable-end wall and roof rafters that separated Stable B from Barn A.

2.5.23 No signs of bats, however, were recorded on any of the internal surfaces.

Unit C

2.5.24 This was a small shed with brick walls on the north and east elevations and chicken wire along the open south and west elevations. The gently sloping, west-facing, roof consisted of red pantiles supported by timber roof rafters.

2.5.25 No signs of bats were recorded.

Barn Owls

2.5.26 No signs of barn owls were recorded in Barn A, Stable B or Unit C.

Other fauna

2.5.27 Bird nest material (small twigs and branches) was recorded on the topmost purlin of the north-facing pitched roof above the support column of Truss 1111 in Barn A. Also, whitewash from bird droppings and evidence of nest material occurred between the corrugated sheets and main roof rafters that occurred above Truss 1111 of this building. More bird nest material was also recorded on the purlin and roof rafter of the south-facing pitched roof just east of Truss 111 of this building. Yet another bird nest was recorded in the apex where the main roof rafter approached the ridge beam at the western end of Barn A. Finally, occasional streaks of faint whitewash, indicative of roosting birds, was recorded on all the main trusses of Barn A (labelled 1 – 1111 on Drawing No. 1).

2.5.28 In addition, pigeon feathers and a broken white egg shell (probably of a feral pigeon) were noted on the straw floor of the small room at the southern end of Stable B. Finally, several mouse droppings were also recorded on the floor towards the edge of the main room of Stable B.

2.6 Interpretation/evaluation of survey results

Presence/absence

Bats

2.6.1 Evidence from the daytime survey (12th February 2010) indicated the presence of a small, temporary, summer bat roost (preliminarily identified as brown long-eared bats *Plecotus auritus*) within the ridge beam of Stable B.

2.6.2 No signs of bats were recorded within Barn A or Unit C and this was indicative of an absence of any roosting bats within these particular buildings. Nevertheless, the conclusion that bats are absent from Barn A must be treated with some caution as bats often use roosts temporarily during the active season (mid-April – September). Thus, it is possible that one or two bats may also roost temporarily in Barn A during the summer months and that evidence of such use had been washed away or smothered under leaf litter/debris at the time of survey.

Barn owls

2.6.3 Evidence from the daytime survey indicated the absence of barn owls from any of the buildings.

Site status assessment

Bats

2.6.2 There was direct evidence of a small, temporary bat roost within Stable B at the time of survey. In addition, crevices suitable for bat entry into potential bat

roosts were recorded within both Barn A and Stable B and it is possible that one or two bats may roost temporarily in such areas at other times of the year. This assessment takes into account the reasonable feeding habitat in the immediate vicinity and in the surrounding area, the condition of the buildings and the results of the inspection together with the bat roost potential present. It is therefore recommended that several precautionary mitigation measures be undertaken to ensure that the status of the local population of bats is maintained prior to, during and after the proposed repair works.

2.7 Constraints

- 2.7.1 There were several constraints to the survey, one of which was that the survey occurred on 12th February 2010, when bats are hibernating. Thus, external signs of summer roosting bats may have been washed away via rain etc. Another constraint was that the floor of Barn A and the floor of the small room of Stable B were partially covered with debris and straw respectively, making the detection of bat droppings on these surfaces difficult.

3 IMPACT ASSESSMENT IN ABSENCE OF MITIGATION

3.1 Short-term impacts: disturbance

- 3.1.1 Short-term disturbance to the small summer bat roost within Stable B would occur from scaffolding the roofs and walls in order to undertake repair works. In addition, the extra noise, vibration and dust that would occur from the presence of site operatives and machinery may also cause some disturbance.

3.2 Long-term impacts: roost modification and/or loss

- 3.2.1 The proposed repair/renovation works would be likely to permanently remove/destroy the small summer bat roost from Stable B. In addition, this would include the removal of the existing entrance/exit openings for bats that currently occur through hole(s) within the red pantile, pitched, roof and/or between the top of the brick wall and overhanging pantiles. This would permanently prevent bats from being able to access the main room of Stable B and, hence, their current roosting site(s) within the ridge beams.

3.3 Predicted scale of impact

- 3.3.1 The proposed repair/renovation works at the barn and stable adjacent to Horkstow Hall Farm Cottage would be likely to have a long term, negative, impact on the small, temporary, summer bat roost within the ridge beam of Stable B. This may have a small adverse impact on the population of bats (preliminarily identified as brown long-eared bats *Plecotus auritus*) at the local level.

4 RECOMMENDED MITIGATION MEASURES

4.1 Mitigation Strategy

Barn owls

- 4.1.1 As noted in paragraph 2.6.3 no signs of barn owls were recorded and therefore no mitigation strategy is required for this protected bird.

Bats

- 4.1.2 The proposed repair/renovation works would be likely to result in the destruction of a small, temporary summer bat roost (preliminarily identified as a brown long-eared *Plecotus auritus* bats) recorded in Stable B. In addition, it is possible that a temporary summer bat roost may also occur in Barn A. It is therefore recommended that a further survey of both these buildings be undertaken when bats are at their most active i.e. at some point between May – August, to confirm the results of the winter survey.
- 4.1.3 Should the repair/renovation works result in the destruction of the temporary summer bat roost in Stable B, as is concluded by this report, then there would be a legal requirement to apply for a Bat Licence from Natural England to cover the said work. The Licence would require a mitigation strategy aimed at ensuring that no net loss of the existing bat roost capacity in Stable B occurred as a result of the proposed repair/renovation works.
- 4.1.4 Details of the proposed repair/renovation works were unavailable at the time of writing the report but a bat mitigation strategy would be likely to include the following key elements:
1. The placement of at least six Schwegler 1FF bat boxes in some of the mature trees adjacent to the property at least two months prior to the commencement of any repair work. This would ensure that alternative roosting places were available should bats be indirectly disturbed during the proposed works. Alana Ecology Ltd (www.alanaecology.com) is a good supplier of such equipment and correct siting of the bat boxes is important to increase chances of occupancy. The boxes should be sited at least 3.5m from the ground and in places where there are clear flight paths for bats entering and leaving the boxes. In addition, at least some of the boxes should be sited with the front facing SW to SE, to ensure that they warm up during the day. The boxes should remain in place once the works are complete and their extremely durable material (made of light-concrete) would ensure that they would last for many decades. Finally, these types of boxes are self-cleaning and thus maintenance-free.
 2. An assurance that the works would take into account the clear seasonal changes in behaviour and roost selection shown by bats, and be undertaken when they are at their least vulnerable. The aim would therefore be to commence works when bats have either finished hibernating and are able to feed at night, but have not yet started breeding (April), or when they have finished breeding but have not yet started to hibernate (September/October). Should such works commence outside

the recommended times then there is a low risk of having to stop works (as noted in mitigation measure No. 3, below).

3. Caution should be applied to all dismantling procedures with any cavities beneath the roof coverings, timbers and walls of the buildings checked for bats as the work proceeded. In particular, the contractor should be made aware of the possibility of bats roosting between the ridge beam and red pantiles of Stable B at the locations shown in Drawing No. 1 and Plate 4. It is essential that the contractor is also aware of what action to take should roosting bats be found i.e. that a Licensed Bat Worker should be immediately notified and all work stopped. However, if works are timed to take place when bats are at their least vulnerable (refer to No. 2) then any bats temporarily roosting within the ridge beam of Stable B (if any) should be able to disperse 'naturally' without any interference. If this is not the case, the torpid bats should be carefully transferred, by the Licensed Bat Worker, from the roost into one of the Schwegler bat boxes in the nearby vicinity.
4. The existing timbers of the buildings should not be treated unless found to contain active woodborer in which case 'bat friendly' permethrin compounds should be used. As far as possible any remedial timber treatment within the buildings should be timed to avoid the summer months (beginning of May – end of August) and to take place when no bats appear to be present.
5. An assurance that any new roof membrane should be Tyvek breathable roofing felt. BCT (Bat Conservation Trust) are currently liaising with DuPont (the manufacturers and distributors of Tyvek) to try and ensure that it is suitable for roosting bats (www.bats.org.uk). Nevertheless, it is possible that the surface of the current membranes available from Tyvek would be too smooth for bats to grip. Thus, a Netlon-type windbreak material with 7mm round holes should also be securely fixed both over and under the entire new roof membranes to ensure that its surfaces are suitable for bats to grip.
6. Ideally the existing bat roost in Stable B should be kept *in situ* but the likelihood of this is low. Therefore an assurance would be required to create a number of diverse replacement bat roosts within the buildings to try and encourage bats to continue to roost in the locality. These should consist of the following measures:
 - The provision of at least 5 bat access routes with minimum dimensions of (40mm x 25mm) at eaves level along the east and west elevations of Stable B. Similar provision should be made at the gable ends, and also along the north and south elevations, of Barn A. The aim would be to allow bats to access the potential roost cavities that could be created between the brick walls and membrane at these levels. The approximate locations of each access point should be shown on detailed sketches.
 - The provision of at least ten access gaps for bats into potential roosting spaces under the ridge tiles of each of the repaired roofs. These could be installed by leaving gaps (20mm x 50mm) in the mortar

under the ridge tiles. The approximate locations of each access point should be shown on detailed sketches.

- The insertion of modified 'bat' bricks within the east, west and north elevations of Stable B. Similar provision should be made within the gable end walls of Barn A and also along the north and south elevations of this building. These would allow bats entry into any potential roosts within the wall cavities at these locations. The dimensions of such a modified 'bat' brick are shown in Figure 3 and they should be placed in locations higher than 3m.
 - The provision of bat access into any loft space that may be created during the proposed repair and renovation work.
7. Finally, a monitoring plan should be put in place to assess whether the bat population has responded well to the mitigation measures outlined above and to inform ongoing roost management. This should consist of a pre-emergence examination of the new potential roost spaces and counting the number of bats leaving the roost on emergence in June/July. At the same time the bat boxes should also be examined.

6 REFERENCES

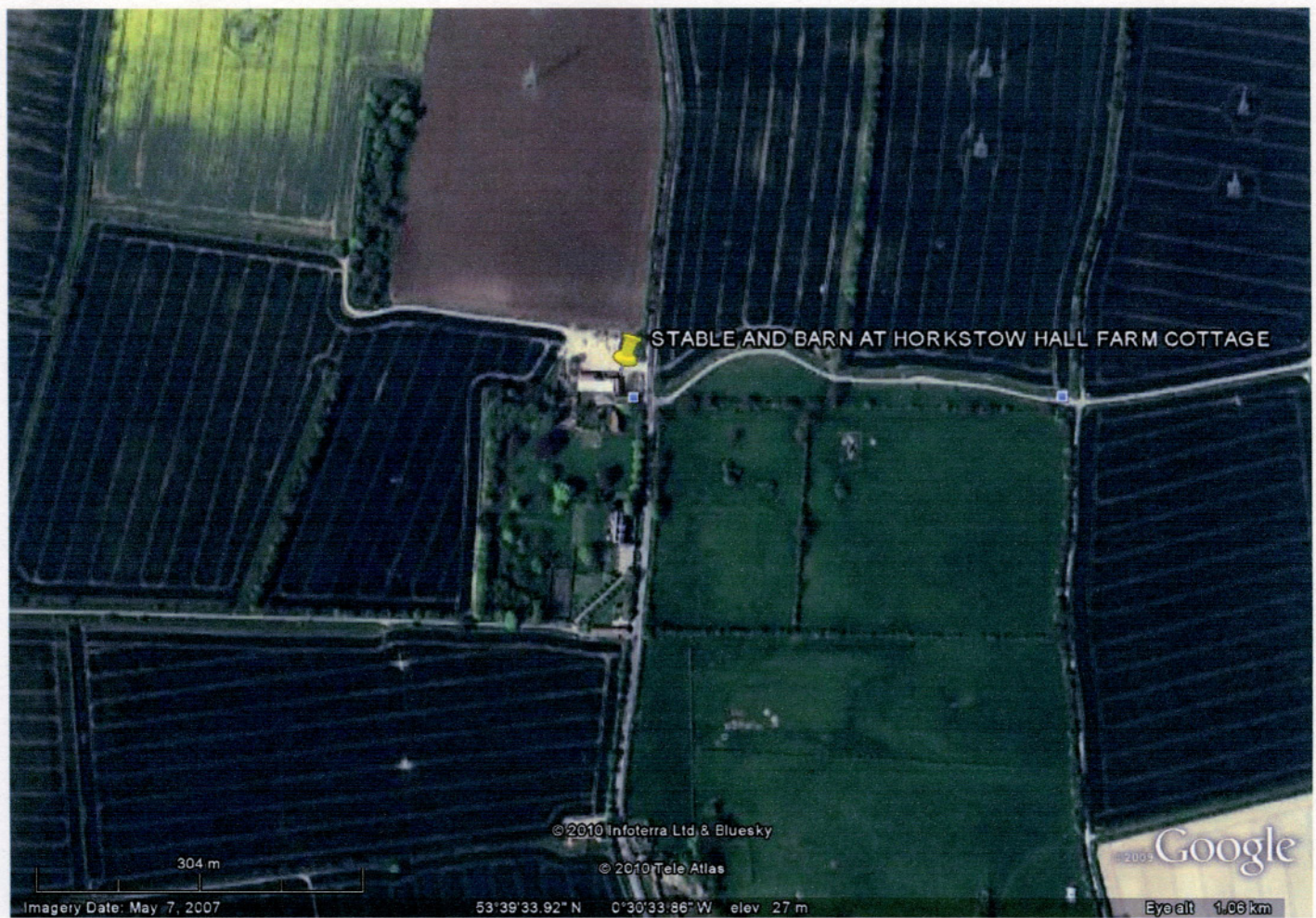
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Walsh, A. L., and Harris, S (1996) *Foraging habitat preferences of vespertilionid bats in Britain*. Journal of Applied Ecology 33: 325-344.



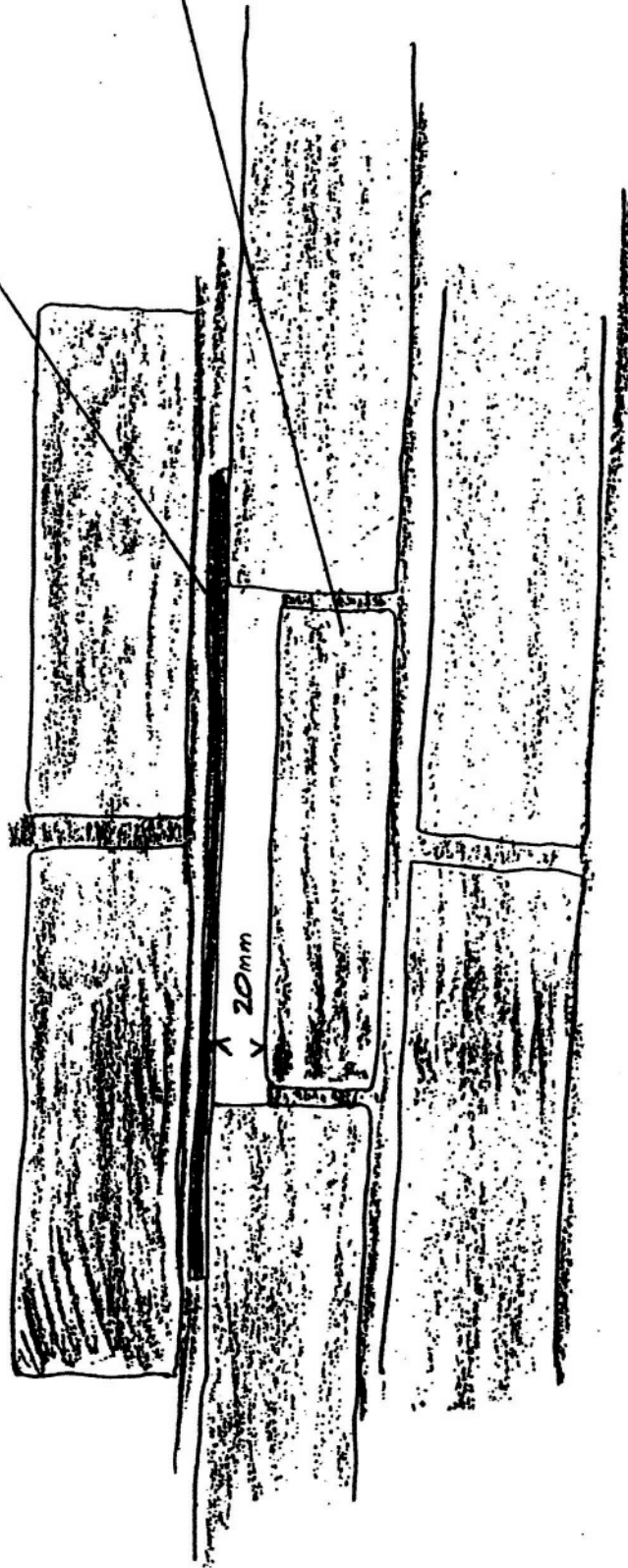
PROJECT	Barn and Stable at Horkstow Hall Farm Cottage		
TITLE	AERIAL PHOTO AND SITE LOCATION MAP		
SCALE	As shown	DATE	February 2010
EINC	FIGURE	1	



PROJECT	Barn and Stable at Horkstow Hall Farm Cottage		
TITLE	AERIAL PHOTO: CLOSE-UP OF BUILDINGS		
SCALE	As shown	DATE	February 2010
EINC	FIGURE		2

Insert slate into
mortar to bear the
bricks above

Modified 'bat' brick
cut down as
shown, inserted
and pointed up



PROJECT	Barn and Stable at Horkstow Hall Farm Cottage		
TITLE	DIMENSIONS OF A MODIFIED BAT BRICK		
SCALE	DATE	February 2010	
EINC		FIGURE	3

GAP SUITABLE FOR BAT ENTRY INTO A POTENTIAL BAT ROOST BETWEEN THE INTERNAL WOODEN LINTEL AND WINDOW FRAME OF THE BLOCKED WINDOW OPENING.

PROJECT	Barn and Stable at Horkstow Hall Farm Cottage		
TITLE	PLAN OF BARN A, STABLE B AND UNIT C		
SCALE	DATE	February 2010	
EINC	DRAWING	1	

- Barn walls
- Butts
- Brace
- Truss numbers (as original)

X LOCATION OF A BAT DROPPING ON THE STONE FLOOR BENEATH THE RIDGE BEAM

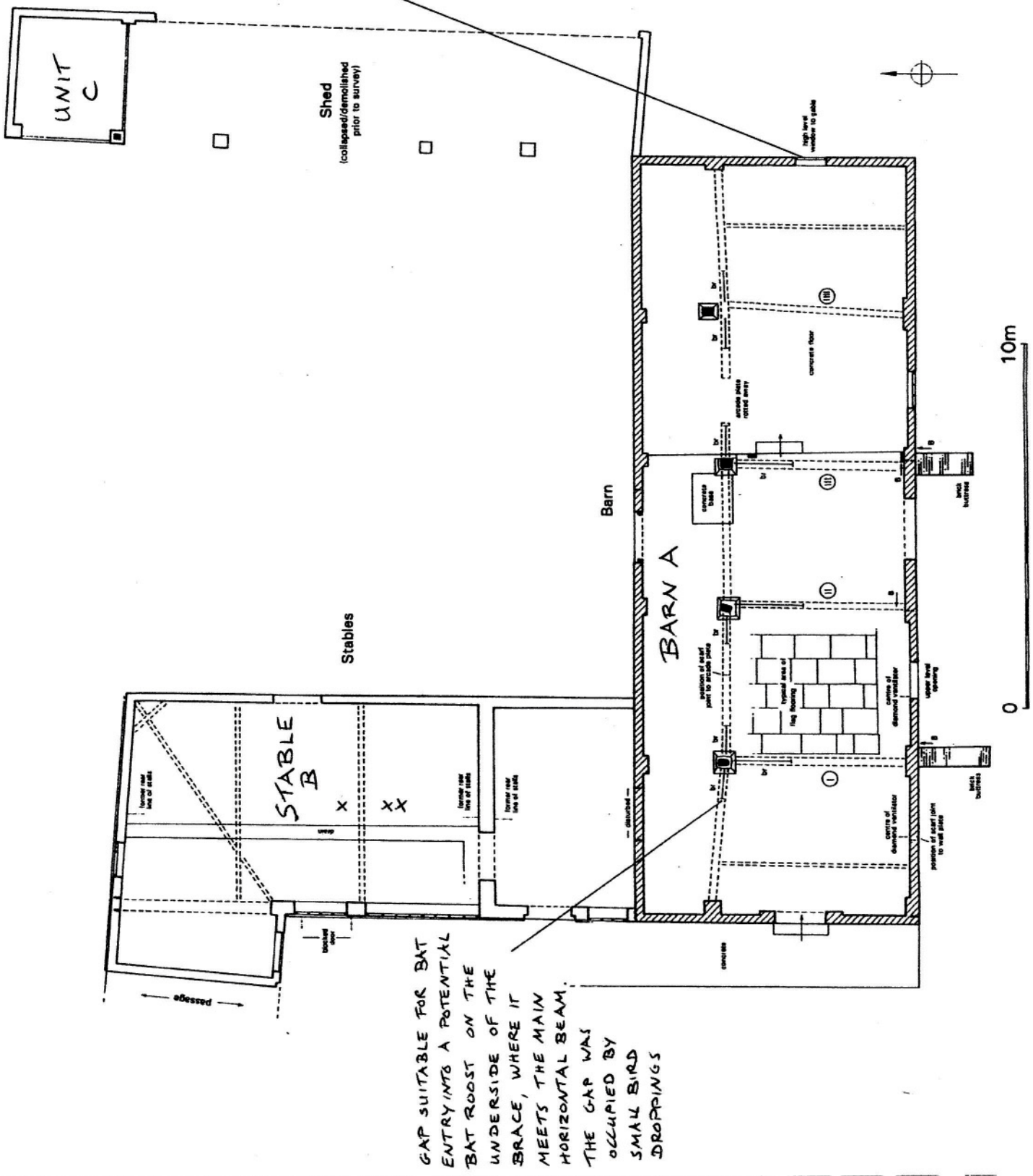


Plate 1 Barn A (north elevation), Stable B (east elevation) and Unit C (roof)

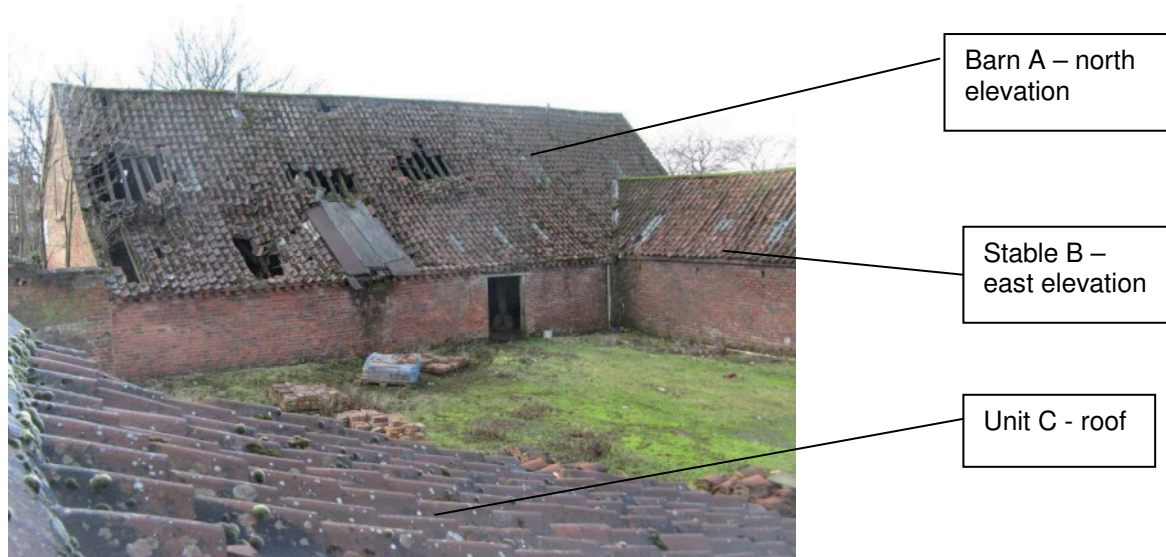


Plate 2 Barn A – gap suitable for bat entry into a potential bat roost at the junction between the brace and main horizontal beam (refer to Drawing No. 1 for location)



Plate 3 Barn A - gap suitable for bat entry into a potential bat roost between the internal wooden lintel and window frame of the blocked window opening in the east gable end

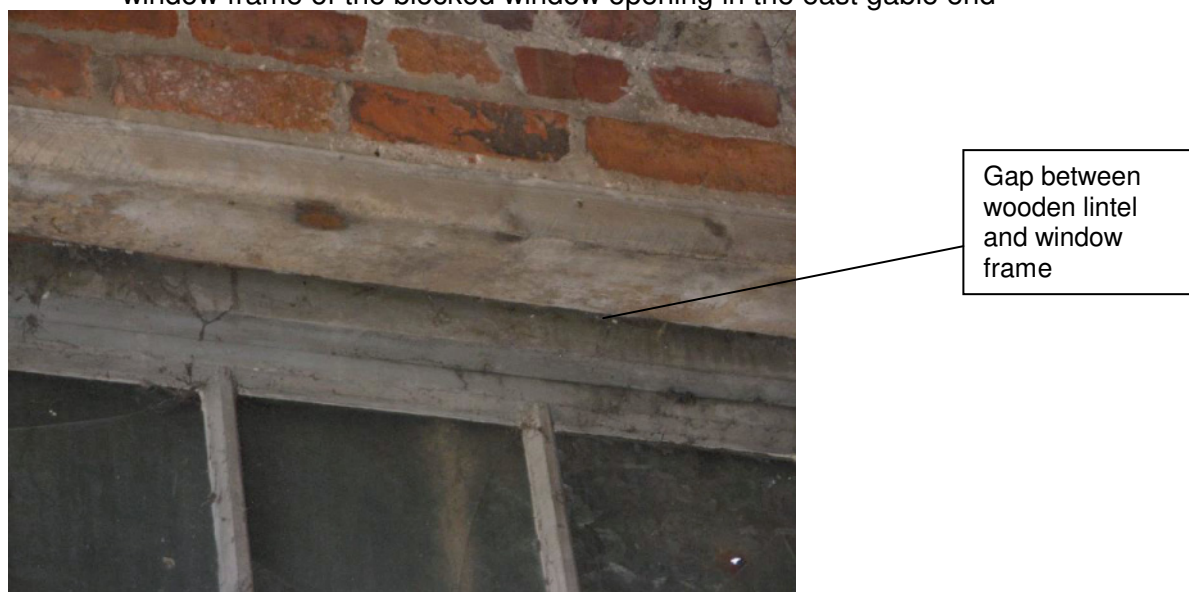


Plate 4 Stable B – main room looking from north to south - location of three bat droppings on the floor below the ridge beam



Location of three
bat droppings on
the floor below
the ridge beam

APPENDIX 3
LISTED BUILDING DESCRIPTION

LISTED BUILDING DESCRIPTION

IoE Number: 165851

Location: BARN APPROXIMATELY 30 METRES NORTH-EAST OF HALL FARM COTTAGE, MAIN STREET (west side), HORKSTOW, NORTH LINCOLNSHIRE, LINCOLNSHIRE

Date listed: 17 October 1985

Date of last amendment: 17 October 1985

Grade II

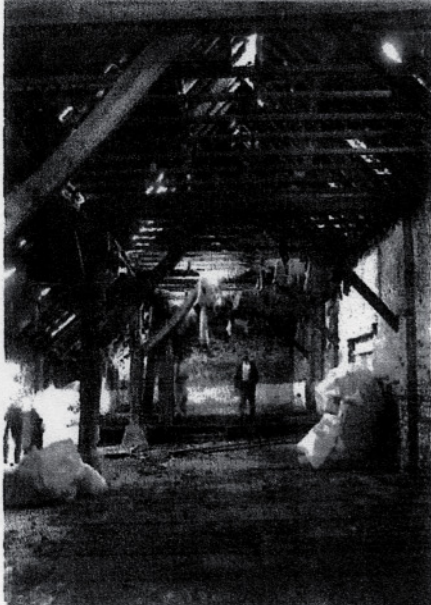
SE 91 NE HORKSTOW MAIN STREET (west side) 7/51 Barn approximately 30 metres north-east of Hall Farm Cottages GV II

Barn. C16-17 timber frame with C18 brick casing and later alterations. Internal timber framing, brick walls, pantile roof. 5 bays of frame, with aisle to north. South front: 2 C19-20 buttresses, central stable door under segmental arch. 2 blocked diamond-shaped breathers and plain hatch door to left; C20 casement to right. Timber wall-plate (probably former aisle-plate) visible at eaves. Right return, facing road, has inserted C19 hatch and C19 raking dentilled brick cornice. Central entrance to rear. Interior: arcade of 4 posts on C20 concrete bases, with long braces to the tie beams and shorter braces to the aisle-plate. The end posts have been replaced by brick gable-ends, the south aisle removed and the arcade underbuilt. Oak coupled rafter roof has pegged principals with trenched purlins and later raking struts to tie-beams in 3 central bays, and later clasped purlins to end-bays. Three of the four tie-beams, the two east posts and sections of arcade plate are re-used, and the joinery is relatively crude, suggesting a date late in the timber-frame tradition. A rare and interesting survival.

Source: Images of England website (www.imagesofengland.org.uk)

APPENDIX 4
NATURAL ENGLAND PROJECT BRIEF

**Project Brief for a Combined Management Plan and Feasibility
Survey for a Building Restoration Proposal for the barn 30 m
NE of Hall Farm Cottage, Main Street, Horkstow, North
Lincolnshire.**



Prepared for:
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Horkstow,

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October 2008

National Grid Reference: TA 987 193

Introduction

It is proposed to consider restoration of the Grade II listed barn 30 m NE of Hall Farm Cottage, Main Street, Horkstow, North Lincolnshire as part of a Higher Level Stewardship Scheme (Agreement Number AG00271231). Grant aid is available for this work from Natural England. A management plan is required in the first instance, both to identify the works required to bring the building back to good repair, and to provide a full specification and fully costed schedule for repair.

The barn was listed Grade II in 1985. The description reads:-

'Barn approximately 30 metres north-east of Hall Farm Cottages GV II Barn. C16-17 timber frame with C18 brick casing and later alterations. Internal timber framing, brick walls, pantile roof. 5 bays of frame, with aisle to north. South front: 2 C19-20 buttresses, central stable door under segmental arch. 2 blocked diamond-shaped breathers and a plain hatch door to the left; C20 casement to the right. Timber wall-plate (probably the former aisle-plate) visible at eaves. Return right, facing the road, has an inserted C19 hatch and C19 raking dentilled brick cornice. The central entrance is to the rear. Interior: arcade of 4 posts on C20 concrete bases, with long braces to the tie beams and shorter braces to the aisle-plate. The end posts have been replaced by brick gable-ends, the south aisle removed and the arcade underbuilt. Oak coupled rafter roof has pegged principals with trenched purlins and later raking struts to tie-beams in 3 central bays, and later clasped purlins to end-bays. Three of the four tie-beams, the two east posts and sections of arcade plate are re-used, and the joinery is relatively crude, suggesting a date late in the timber-frame tradition. A rare and interesting survival.'

Not noted above the barn interior also has a York stone flagged western end; the eastern end has a later raised concrete floor which may sit over original flags. No central drain, indicative of use of livestock, is visible. Some of the timberwork appears to exhibit carpenters marks; some decorative carving is also evident. The scale of the barn indicates that it functioned within a very wealthy agricultural land-holding; originally as a threshing barn. In later history at least it was an element of the Horkstow Hall estate. The barn is a element of a wider surviving farmyard complex which, in it's latest form was ranged around two courtyards. Repair and development proposals for the remainder of the farmyard complex are already under consideration. Local history confirms that in 1754 the great British painter George Stubbs rented a farmhouse in the village of Horkstow and spent 18 months dissecting horses; this understanding of horse anatomy allowing him to produce his most famous horse paintings. Given the date and position of this barn it is thought possible that this is the barn in which Stubbs worked.

The extent of original fabric, particularly the early timber frame, make this barn a rare and unusual survival. The pantile roof of the barn is currently in very poor condition with many slipped and broken tiles. The resultant water ingress

is now beginning to affect the internal timber frame in places and some form of rescue package for the barn is now essential. Possible end-uses for a repaired barn are still under consideration. The barn is currently not thought readily suited for a key use within the modern farm economy. This is largely due to accessibility issues for heavy machinery – both into and out of the building and moving within it. It is not a ready candidate for domestic conversion; the local market for other commercial uses is also thought limited in the current economic climate. This management plan is proposed in part to help progress thinking on this point. The barn has a later attached range on the northern side which also remains in agricultural use. Immediately adjacent to the road a further small range of buildings also originally extended to the north. The range has recently been partially demolished as a necessary response to flood damage. Original building materials have been retained on site pending any future rebuild. It is felt that these two attached ranges may be essential as part of a combined package to help make the repaired barn an suitable economic prospect for re-use. With this in mind it is proposed that this management plan also assess these two immediately attached ranges.

The barn is thought to have some wildlife interest with a barn owl and swallows using the interior. Located immediately next to a public road it is clearly visible; it is also an important element of the wider historic village settlement of Horkstow. This is known to date back at least to the Roman period. The remains of the Roman villa, from which elaborate and important mosaic floors have been removed for public display, lies adjacent to Horkstow Hall. The village church has Anglo-Saxon origins and overlooks the site of a medieval hall. The latter hall was occupied into the Jacobean period and retains garden earthworks of this period. Subsequently the whole of this complex was abandoned and the house demolished; leaving earthwork remains across the site.

Objectives of the Project Brief

- This brief and the resulting Management Plan should be used to facilitate full liaison with the Natural England concerning the technical details of both the application and the grant aided work.
- This brief should be used to obtain three itemised quotes for the preparation and production of the management plan. Quotations should be based on the requirements set out in each section of this brief and each item of work costed separately. Actual costings, estimated where required, are essential to allow Natural England to compare and contrast bids.
- The submission should also include:
 - A method statement demonstrating how and when the work will be undertaken,
 - Identification of who will undertake the work and an outline of their professional expertise in building conservation and buildings of this type.

Appendix One, 'Higher Level Stewardship: The Repair and Restoration of Historic Buildings. Applicants Guide', explains in more in detail the principals of funding under agri-environment schemes, and should be referred to in conjunction with this brief.

Content of the Management Plan

1. Summary

A short concise summary of the aims of the restoration and the main findings.

2. Site Location and Description

This section should include a site plan to an appropriate scale. Photographs of the buildings from key viewpoints should be included and cross-referenced to the scaled plan. A description of current condition of the building and the threats and issues facing it.

3. Summary of the Historical Development and Statement of Significance

A brief summary of the historical development of the buildings. In order to inform the summary, the buildings and the associated farmstead should be researched through map regression using historic maps and any other available documentary sources.

A statement of the significance of the buildings should be included, in order to assess the structure from both a local and regional perspective, and a comment on the contribution of the building to the local landscape character and public amenity. The findings from section 4 below, 'Analysis and Recording' should be used to inform the summary

4. Analysis and Recording

Undertake a site survey of the building looking at its form, use of materials and methods of construction, past function, style of architecture and changes/adaptations over time and the reasons for the changes. This should be cross-referenced with the information gathered in 2 and 3 above.

A record of the building as it presently exists, and analysis of the fabric likely to be affected by repair should be made using appropriately scaled plans, drawings and photographs, equivalent to Level 2 of English Heritage's '*Understanding Historic Buildings: A Guide to Good Recording Practice*' (available at www.helm.gov.uk under Guidance Library). Level 2 is a visual and descriptive record. A brief to guide the building recording based on the English Heritage guidance is attached (Appendix Two). Depending on the nature and level of necessary repair identified within the management plan, appropriate recording may also be required during repair works and after their completion.

5. Wildlife Survey

Identify the location of any wildlife species which use the building either seasonally or throughout the year and consider their requirements and mitigation, and the legal obligations under the relevant wildlife legislation, when compiling the plan and scheduling of works. The buildings are regularly used by Barn Owls.

If protected species are found, a licence may be needed before work can take place. Certain species using a building may be protected under the UK Wildlife & Countryside Act (1981) and/or European wildlife legislation. Further advice on this could be provided by the Natural England office.

6. Condition Survey

Prepare a comprehensive survey of the buildings. This survey should be illustrated using photographic images of elevations and details, or survey drawings if appropriate, which in turn must be tied into a scaled plan. Comments should be made on the feasibility of repair, highlighting good points as well as looking at defects and the remedies required. The survey should prioritise work into areas into immediate (1-2 years), necessary (2-5 years) and desirable (5-10 years).

7. Feasibility Survey

The project should include a brief focussed assessment of the feasibility of a range of future uses for the barn. This must include consideration of:-

- (i) What the future use of the building might be if the barn is repaired as an HLS project.
- (ii) What, if any, changes to the fabric and internal space would be *desirable* to enable a future use and how these might affect the significance and historic integrity of the building.
- (iii) What, if any, changes to the fabric of the building would be *essential* to enable the proposed use and how these will affect the significance and historic integrity of the building.
- (iv) Any alternatives to any potentially damaging alterations identified in (ii) and (iii) above and a description of how their impact could be minimised or mitigated.
- (v) A summary to clearly demonstrate whether other uses can be achieved without compromising the historical integrity and essential character of the building.

Please note in considering the above that the two attached building ranges included in the study are included to allow flexibility in development options; particularly providing a location for facilities and services which the main barn may not be able to support. Any proposals should be considered acceptable by the local planning authority.

The feasibility survey is not a usual element of an HLS buildings project but is introduced here to help clarify future thinking on this barn. It will require prior discussion with the Natural England HEA to ensure it is appropriately focussed and costed.

8. Building Repairs and Alterations

Using information from 1 to 7 above, Identify the repair work and prepare a full specification for materials and work methods, together with a schedule of works in order for comparable quotations from building contractors to be obtained. Guidance on the preparation of building specifications and schedules are given in Section 6 and Annexes 2 and 3 in Appendix One.

At this stage the consultant should provide a draft copy of the Management Plan to both the owner and Natural England which covers the above points of the brief. This will enable Natural England to comment prior to proceeding with an invitation to building contractors to tender for the building work.

9. Tender and Tender Reporting

Using the agreed specifications and schedules of work, obtain three competitive quotes from building contractors with demonstrable experience of working on building conservation projects and buildings of this type. Evaluate and make an assessment of the tenders and provide a written and justified recommendation to RDS and the owner as to which offers the best value. At this stage the consultant should also provide a quote for the costs of managing the project through to completion.

10. Reporting Requirements

Natural England will require 2 copies of the final Management Plan and Feasibility Study in a bound A4 printed format. An additional copy of the building analysis and recording should be submitted to the Historic Environment Record at North Lincolnshire Council. The report should be sent to:

Alison Williams,
The Sites and Monuments Record,
North Lincolnshire Museum,
Oswald Road,
Scunthorpe,
DN15 7BD

Tel: 01724-843533

Appendix One

**Higher Level Stewardship: The Repair and Restoration of Historic Buildings.
Applicants Guide**

Attached as a separate document.

Appendix Two

Brief for Building Recording

Introduction

This brief outlines the necessary level of building recording. It should be used to inform the production of the Management Plan.

Level of Recording

The building recording should be undertaken to Level 2 of 'Understanding Historic Buildings: A Guide to Good Recording Practice' as referenced in section 4 above. This guidance should be referred to in conjunction with this brief.

Both the exterior and interior of the building will be photographed and a plan made. The examination of the building will produce an analysis of its development and use and the record will include the conclusions reached.

A level 2 record will typically include:

Written Record

1. The precise location of the building.
2. The date of the record and the name(s) of the recorders.
3. A summary statement describing the buildings type or purpose, materials and possible date(s).
4. A short account of the buildings plan, form, age and development sequence, where known. There should also be a note of building's setting and contribution to the local landscape.

Drawn Record

1. A site plan drawn to an appropriate scale.
2. A floor plan to scale which should show the form and location of any structural features of historical significance (e.g. blocked doorways and windows, former openings, masonry joints, changes in internal levels).
3. Drawings (to scale or fully dimensioned) recording the form and location of other significant structural detail (e.g. timber framing, roof construction, internal features relating to use such as troughs, fittings etc).

Photography

Photography should be undertaken before and after works. Should the situation warrant it (for example a high level of repair to historically significant

fabric) then photos should be taken during works. The record should consist of:

1.Views of the exterior of the building, including details of any structural features of historical significance 2. Views of the interior of the building, including details of any structural features of historical significance.

The photographs should be tied in with the block plan.

Deposition of Record

The results of the building recording are to be included within the Management Plan.

One copy of the building recording, as described in Section 9 above, should also be submitted to Historic Environment Record at the County Council.

APPENDIX 5
EDAS METHODS STATEMENT

MANAGEMENT PLAN FOR BUILDING RESTORATION PROJECT, BARN 30m NE OF HALL FARM COTTAGE, MAIN STREET, HORKSTOW, NORTH LINCOLNSHIRE

EDAS METHODS STATEMENT

Summary of the Historical Development and Statement of Significance (item 3 of Natural England brief dated October 2008).

A brief summary of the historical development of the building will be produced, based on observations made during the site survey and locally-based research. The latter will involve historic map regression and available documentary sources, which will try and date the original complex more accurately and link it to local land ownerships. The historical development will be linked to appropriate illustrative photographs of the building from key viewpoints and cross-referenced to a scaled plan.

The Statement of Significance will assess the structure from both a local and regional perspective, and comment on the contribution of the building to the local landscape character, public amenity and biodiversity.

Analysis and Recording (item 4 of NE brief).

A survey of the building complex will be undertaken, looking at its form, use of materials and methods of construction, past function, style of architecture and changes/adaptations over time and the reasons for the changes.

A record of the complex as it presently exists will be made, comprising an appropriately scaled ground floor plan, internal/external photographs and detailed description, equivalent to Level 2 of English Heritage's "Understanding Historic Buildings: A Guide to Good Recording Practice"; Level 2 is a visual and descriptive record. The fabric likely to be affected by future repair will also be analysed and commented on. Depending on the nature and level of necessary repair identified within the management plan, appropriate recording may also be carried out during and after repair works.

Wildlife Survey (item 5 of NE brief).

A desk-top study will be undertaken, to gather and collate information from specialist consultees such as the Local Records Centre, the local Bat Group, the Barn Owl Trust, RSPB and local barn owl conservation group.

All species of bats are fully protected under current legislation and so a systematic daytime inspection for bats roosting in the combined cart shed and barn will be undertaken between May and August. This is the time when bats are at their most active and hence most likely to be detected (sub-optimal times for such a survey occur the rest of the year, from September to April). The survey would search for droppings beneath and/or within potential bat roost sites, such as any small holes/crevices within the walls, roof space(s) and timber support structures. At least one nocturnal exit survey and/or dawn survey would also be undertaken by a Bat Licence Holder at this time.

It is recommended that the results of the bat survey be available in a full report at least three months prior to the commencement of any restoration work. This is to ensure that, should bats be recorded within the buildings, there is enough time available to apply for, and be granted, a Bat Licence from Natural England before the commencement of any works. The aims would be to ensure that an approved mitigation statement is available for the continued welfare of the existing local bat population, and that any unnecessary and costly delays to the possible commencement date(s) of the proposed restoration works are avoided.

Information indicates that the buildings are regularly used by Barn Owls, and these birds are listed on Schedule 1 of the 1981 Wildlife and Countryside Act. As a result, active barn owl nests are afforded protection against disturbance, as are breeding adults and dependent young whilst at or near the nest. "Near" a nest is open to interpretation but it normally approximates to within the same building or just outside.

The buildings will therefore be searched for barn owl droppings, pellets, feathers and/or nest debris as evidence of day-time roosts and/or nesting sites. The commencement of restoration works would be timed to avoid the main nesting season (March to August) and would require the provision for the owls to be completed by the end of the following January. Barn owls, however, have the longest breeding season of any owl species and active nests have been found in every month of the year, so an extra cautionary approach is called for. Thus, should breeding barn owls be recorded, then a nest inspection would be carried out by a Barn Owl Licence Holder before any work commenced.

The wildlife survey would evaluate the buildings for roosting bats and owls according to their national, regional, district, parish and/or local ecological value. The survey would also summarise relevant information from UK and Local Biodiversity Action Plans on priority habitats and species. The wildlife section of the report would be written in the format of a Method Statement, sufficient in detail to submit as part of an application for a Licence from Natural England in Respect of Bats and/or Barn Owls, and also sufficient in detail to satisfy the local authority. It would include sections on the type of surveys undertaken (including a habitat description and an interpretation/evaluation of the results), an impact assessment (including long-term impacts etc.) and a section on mitigation and compensation.

Report

A stand-alone EDAS report would be produced, collating the results of the above, for inclusion as an appendix in the larger management plan and/or summary extraction as necessary.

Ed Dennison
EDAS
19 June 2009